Coastal Zone
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A COASTAL PROGRAM CONFERENCE:

TECHNIQUES FOR IMPROVING

MAINE'S

HARBORS AND WATERFRONTS

Sponsored by

the Maine State Planning Office

in cooperation with

the Department of Marine Resources
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Editor's Note

In an effort to bring conference proceedings to the reader in a useful and manageable form, the original transcripts have been liberally edited, always, however, with an eye to providing the substance of the material and maintaining its context. Toward these ends, formal panel discussions have been synopsized. When presentations were followed by question and answer periods, both inquiries and replies, while not verbatim, have been edited only to the extent that was necessary to make content clear or to eliminate some awkwardness or wordiness. Because session IX, "How Do We Make Fish Piers Work for Maine Fishermen?" developed as a dialogue, rather than as discrete presentations by each of the panelists, I have taken the liberty of presenting that section in a slightly different format.

Phyllis R. Coggins

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INTRODUCTION

The goal of Maine's Coastal Program is to satisfy the short- and long-term social, economic, and environmental needs and aspirations of Maine's people by achieving a balance between conservation and development.

Fostering liaisons between federal, state, and local governments for the benefit of Maine residents is an important ingredient of the Coastal Program.

To this end, a conference for "local officials, harbor masters and committees, port authorities, and others interested in the improvement and revitilization of Maine's waterfront areas," was held in Castine, Maine, on July 10-11, 1980. "The aim [was] to help communities develop and use their waterfronts."

After welcoming remarks by Allen Pease, Director, State Planning Office, and Admiral Edward Rogers, Commandant of the Maine Maritime Academy, the conference opened with an overview of the prospects for coastal development.

PROSPECTS FOR DEVELOPING MAINE'S WATERFRONTS AND HARBORS

The first panel was assembled to provide an overview of Maine's prospects for waterfront development, coastal development, marine development. On the panel were:

Nathaniel H. Bowditch (moderator), President, Maine Development Foundation
George N. Campbell, Jr., Commissioner, Maine Department of Transportation
Barbara Cottrell, Director, Maine State Development Office
Michael Moser, Director of Economic Development, Maine Department of Marine Resources
Lee S. Wilbur, President, Maine Marine Industries Association.

BARBARA COTTRELL talked about development opportunities along the coast of Maine. Her agency has a broad mandate for economic development activities in Maine. These activities are geared toward attracting new business, helping existing businesses thrive, and promoting tourism.

A recent MIT study indicated that the major growth of businesses in the United States is among those companies with twenty to fifty employees. This is the kind of industry the State Development Office directs its energies toward attracting to the state or helping within the state. Maine has two assets, natural resources and human resources, upon which economic development hinges. Over the next ten years opportunities for growth should occur in the areas of cargo ports, fish piers, tourism, gasohol and boat building — all of which take advantage of the resources coastal Maine offers.

LEE WILBUR represented boat building, one of Maine's traditional industries and one that continues to show growth potential through related fields (recreation services and marinas).

Mr. Wilbur indicated that there are several waterfront problems facing Maine communities which could also cause a hiatus in the boat building industry if solutions are not found:

1) Escalating waterfront land prices are driving boat building businesses away from the coast.

2) There are mooring shortages in many towns due to the increasing demand of new recreational and commercial vessels.

3) There is a growing need for access and launching facilities.

"From the Maine Marine Industries point of view, the state and towns have great potential for economic growth with the boating industry if they can take advantage of the growth in both recreational and commercial boating."

The "Maine Mystique" has done much to help maintain the industry, but Mr. Wilber suggested several steps he believes will insure its continued importance:

1) Rethink the property tax on boats. At present taxes vary with each community, a situation which has caused the demise of boat building and storage businesses in several Maine towns. Maine Marine Industries has been working toward developing a more uniform and equitable tax on boats.

2) Retain sales tax exemption for out-of-state work. In this area an attempt to save $50-100,000 in taxes would cost the state millions in lost work.

3) Recognize the economic value to the towns of their waterfront areas. Community leaders and managers should help justify the necessary expenditures to protect their waterfront. If necessary, acquiring land when it becomes available and either holding it for a purchaser who will develop it in accordance with the town's comprehensive plan or developing it with town resources.

MIKE MOSER talked about the Maine groundfish industry which is the focus of a major economic development effort. Currently the Maine industry is highly fragmented, lacks processing capability (only 15-25% of groundfish landed in Maine are processed in Maine), and is dependent on Boston-controlled markets.

Mr. Moser feels that in-state processing will enable the groundfishery to "make its full potential contribution to the State of Maine's economy." Toward this end the Department of Marine Resources and the Maine Development Foundation are combining talents and resources to promote support from within the industry. These two agencies brought together a group of industry representatives – processors, dealers, shippers, co-op operators – to create an awareness among them of those factors which make groundfish processing an attractive economic opportunity:

1) The "200-mile limit law" was implemented to limit foreign fishing and thereby rebuild fish stocks in U.S. coastal waters.

2) Governor Brennan has created a favorable climate by emphasizing natural resource development.

3) The voters of Maine have approved a $12-million bond issue that will finance facilities to serve and support the fishing industry.

DMR and the Foundation are working with industry management to develop marketing and processing structures for the quality product Maine can supply. At present their efforts are concentrated in Rockland and Portland because these cities already have facilities to service vessels over 60 tons, have ice available, and provide complete marine services.

Maine landings are up "probably 20% over last year." From May 1979 to May 1980 there was a 25% increase in vessels over 60 tons. The number of licenses being issued is increasing (although this may be due to lobster boats already in the fleet re-rigging for a different fishery). There is a growth trend in the fisheries, and the time is right to organize and establish the management structures that would continue the momentum.

GEORGE CAMPBELL discussed some of the broad range of interests under the jurisdiction of the Department of Transportation and "how transportation affects the economy of the state and livelihoods of our people."

A major program administered by the DOT is the fish pier program. A total of $21,851 in local, state, and federal funds has been earmarked for port development in Maine. It is the Department's responsibility to see that the piers get built and the program is completed as mandated. Portland, Rockland, Stonington, Kennebunkport, Vinalhaven, Eastport and Saco have all received various levels of state funding for this work.

The state ferry service also comes under the direction of the DOT. Along with normal fleet maintenance and operations, the Department is currently faced with the prospect of having to take over Casco Bay Lines, an action mandated by the Public Utilities Commission should the private line discontinue service. Ways to absorb the cost of this enterprise are now being considered.

A third area of interest to the state is cargo port development as outlined in the recent study commissioned by the legislature and done by the Booz-Allen-Hamilton Company. The findings of that study are basically that: the state should look at containerized shipping in terms of having a major feeder service in Portland, having a significant neo-bulk cargo facility in Searsport and examining Eastport's potential if it doesn't conflict with the Searsport development and if the hinterland market can support enough neo-bulk cargo and some containerized shipping. The study will provide the focus for future discussions and strategy development, but the Department is waiting to see what interest and commitment develop in the private sector before making public any plans they might be considering for container terminal development.

A final area of emphasis is the state pier where the DOT is working to increase import/export activity. Also the Department has recently signed an agreement with the Maine Fishermen's Cooperative to install icing and fueling facilities at the state pier in Portland.

Question and Answer Session:

Q. Do you think shoreland zoning regulations should be relaxed a bit to accommodate boat builder's land needs?
A. Lee Wilbur: As I stated, the thing that has happened is that the boat building industry has moved inland. Drive down the coast of Maine now and in a lot of small communities you will find yards tucked away in some cranny that is quite well removed from the waterfront. We have developed easier ways to handle boats, to get them into the water, but big boats you don't see anything, really, north of the Boothbay area. There is a conflict with the zoning situation.

Q. In order to build big boats do you have to be on the water?
A. Lee Wilbur: You've got to be on the water. You can not handle them over the road. When you start talking over 25 tons it gets very difficult. I think our largest boat that we put out is about 16 tons and that gets to be a little bit icy.

Q. You mentioned that towns could acquire land and lease it to the proper developers. I am consulting with a small town on the coast of York County; and there are people on the development committee that I am working with who don't want it leased. They want it sold to private developers, the argument being that financing from banks is quite difficult to obtain on land which the applicant does not own. What experience have you had with development on leased land in recent years?
A. Wilbur: I haven't, the only thing that we are looking at in Southwest Harbor is the possibility of applying that. I think that your approach is probably the best, to go ahead and put it back in private hands. I would rather see the government stay out of this as much as possible.

Comment. Paul Devine: I just wanted to correct the gentleman when he said that there aren't any boats built north of Boothbay. We have two very active yards in Rockland. We also have any sort of water-oriented industry that you might be able to come up with in Maine.

Q. Devine: My question is: we are one of the two largest fish depositories in the state and we have a lot of folks that operate either in or around Rockland. We are in the fish pier program for a pittance compared with Portland. When we get our preliminary design work done this summer or this fall, is there any way that that program can be modified so that if we found that we needed three million dollars instead of a million-and-a-half that we could employ the powers that be to see that the job got done right?
A. Campbell: Obviously we are constrained by the amount of money that we have had approved in the bond issue. I think that where there is room for some adjustment my staff will set up a program that offers contingency amounts and a number of other avenues for us to pursue. We certainly share the concern that once we get done with the design we want to make sure that we build something that is efficient and adequate.

Comment. Buck Powell (Eastern Mid-Coast Regional Planning Commission): Just a comment on the shoreland zoning question that was raised here. We have, of course, worked with a number of coastal towns, and shoreland zoning is a locally administered program. I am personally unaware — in our area anyway — of any municipality that has restricted any boat building opportunities along the coast. I think what you are seeing, and what was brought out here, is that the economic competition is more the issue than shoreland zoning. Shoreland zoning remains flexible at local option.

Q. Powell: I think developing the mid-west market for fisheries is an excellent opportunity for the State of Maine, but I'm also looking at a rapidly escalating cost to get the product there and get the empty trailers back. Are you looking seriously into having things shipped to the mid-west or wherever via rail? As many of you may know, Rockland used to have direct rail service to Boston which carried fish on a daily basis along with the passenger rail service that existed at that time. It seems to me that where you are at about a 4 to 1 efficiency on fuel by hauling by rail that this ought to be looked at for such ports as Rockland and Portland which are both connected to rail.

A. Campbell: I appreciate your comment. We always look at a number of options. Rail sometimes is more difficult because of the number of lines between us and the mid-west. I was talking with the commissioner of transportation of Idaho, and he was telling me that they ship all the way to the East Coast on one rail company. If we ship back over, just to get into the New York market we use three rails. There are studies showing the difference in costs and what makes it prohibitive. We are looking at it. And there are others who are talking air freight, so we will be looking at a number of opportunities.

Q. Bowditch: Mike, any comments that you want to add to the question of transportation for Maine fish?

Comment. Moser: We have had consulting reports that suggest that markets like Denver, Minneapolis and Houston have a strong potential demand for Maine groundfish, and it would take much longer than the allowable 48-hour shipping time to truck fish to those cities. We are talking about the need to put high-quality fish in those markets. We are also talking about the need to minimize the amount of time that fish is out of the water because you are talking about a six- to eight-day period that that fish can be sold as Grade A, if it's held in exactly the right conditions. That definitely means some form of air transportation.

Comment. Bowditch: In other words, to the degree that Maine continues to send bulk quantities of fish to Boston, maybe rail can make sense again. But, to the degree that Maine develops its own market – not through Boston, not through New York – for high-quality fresh Maine groundfish in Denver or Tuscaloosa or wherever, it would seem that air travel is the most efficient for that high-quality product.

Q. Mr. Moser, I've been reading that quite a few fish processing plants have closed down along the East Coast in the past few years. Can any of those be re-opened and jobs spread around – for the finished product? Then we could save a lot of transportation costs.
A. Moser: First of all, I'm not aware that a lot have been closed down. And I think we've got enough processing going on in Maine right now to give us a good start. We're talking about new processing facilities we would locate at points where we can make maximum utilization of all the places fish are being landed across the coast. There are some strategic locational factors, and whether an old plant that has been closed down is going to fill the bill, we don't know yet. We've got new logistical requirements because we're servicing markets that we've never serviced before, and everything has got to happen right on schedule.

Q. Are you familiar with any plants in the state of Maine that have been closed down?
A. There's one at Robbinston, a cannery that is closed down. And I read about some last year, but I can't exactly pinpoint where they are.

Comment. There's a difference between groundfish and sardines. Totally different situations. Most of Maine's sardine packing plants have been acquired by a large Texas conglomerate [Zapata] and are now operated by them. We do not want that to happen in the groundfish industry.

Comment. I think what Mike is suggesting is that if you focus on the groundfishery in Maine, which is relatively undeveloped in terms of integrated marketing and processing, I don't think we've gotten to the point where we'll see facilities starting and then failing – because we have relatively little in the way of facilities.

Q. Mike Moser, concerning major processing plants for groundfish. . . The stability of supply is a major factor isn't it? Do you think Maine has some problems in guaranteeing stability of supply?
A. Moser: It does have problems. I think one of the major problems to overcome is an organizational problem. We've got the fish out there. Our fleet is increasingly able to go out to Georges Bank on long trips – as opposed to the day-trip orientation it has had. The market respects volume. And the market respects and pays for predictability of supply. The way to deal with that in Maine is to work with industry and help them develop the system where they can consolidate a large amount of product, or coordinate its delivery very carefully into a marketplace. That can be done. It really is an organizational problem rather than a resource problem, and that's one of the things we're working on right now.

Q. Don Olson: I see everybody working together toward waterfront development. Is there an effort right now on the state's part to resolve some of the difficulties? For example, the Bureau of Public Lands is laying claim to proprietary rights on the waterfront. It's holding up major development in Portland and maybe in other places. We're having real problems with the idea that a state agency wants to make a buck off every development. So where does that stand and will it be resolved? (We think we have it resolved; we're waiting for the Attorney General to rule.)

Comment and Q. Bowditch: While somebody is thinking of a response to that tough question, do you have any thought about the question of supply?
A. Olson: The fish pier complex that we're proposing for Portland would serve as a collection point for the whole state – not meaning that there wouldn't be processing developed in Rockland or Stonington or wherever they're addressing that. But the idea is that the shipping and actual marketing of the product would probably be done from Portland, just because of the size of the complex we're discussing. I think the industry is undergoing a change right now. With the size of vessels and fuel costs, we're running into the same problems that the fishing industry in Europe is having. We have to really take a look at our industry and see what method we might go to that will still guarantee us the supply.

Q. Bowditch: I am going to direct the question of proprietary state government development to Barbara Cottrell and point out that we are not a government agency; therefore, we don't have to answer that question.
A. Cottrell: I used to administer the Submerged Lands Program for the Bureau of Public Lands. The statute was passed in 1975 because, in most instances, the sovereign does, in fact, own the submerged lands out to the three-mile limit. The intent of the legislation was that, because the state owns this land, if a commercial use of the land is going to be made, then the state should receive some renumeration for the use. A leasing program was developed. I think Sandra Crockett, who is now the person administering that program, is here today. You and she, I am sure, have talked before. She might want to discuss what the program is today. But it is law; the state does own the submerged lands in many instances.

Comment. Bowditch: The notion that everybody in the state seems to be converging on development opportunities on the coast is accurate. There is always the danger when people or institutions or organizations sense opportunities that they are all going to trip over each other. On the one hand, you do have opportunity. That's why this conference is here. That's why some people are talking about significant coastal development opportunites. And that's good. On the other hand – whether we come from Augusta or whether it's four Portland city government agencies tripping over each other to do the same thing – we have to be careful that, if we get involved, we get involved in pieces of action that are separate and distinct and related to the skills we have as organizations. But you are right. State government, state-related institutions like the Foundation are rushing to the coast because all of us believe there are opportunities – and opportunities that, if taken advantage of now, mean significant benefits for the state.

Comment. Fred Bartlett (From the State Bureau of Parks): Congress and our legislature, in their wisdom, built into categorical grant funds some fish pier money. Recreational funds available supposedly will be used for recreational purposes. The boat builders industry is moving inland because of a lack of access to the water, the purpose of the fish pier program is to give the fishermen access from the water. One of our primary programs is providing recreational boats access to the water – I think maybe we need to consider some way to remove the restrictions so that we can marry these funds and only use one piece of property for multiple uses.

Q. We've talked about getting fresh fish inland, and we've talked about processing. Will you do some processing here and then ship out processed fish or frozen fish versus fresh fish? What is the relative significance?
A. Moser: I'm not sure I understand that exactly but let me take a stab at it. We emphasize fresh fish because it represents the highest possible mark-up with the lowest possible funding and capital investment. It's a logical thing for the Maine harvester to shoot for if he's got the market structure and the management structure to get into that market. Someone in Maine right now is handling about fourteen million pounds of fish, and he's really a shipper. His business is to ship that fish into Boston where it can be processed. He wants to get into processing very badly, because he understands he can increase his profits by a factor of two if he does that. There would be considerable profit in processing of fresh fish, as opposed to just handling it and shipping it from a Maine location into Boston. And the fresh-fish business is probably one of the highest-profit sides to the fish business that you can get into. Frozen fish is a different problem. Freezing facilities are very expensive. You've got to carry large inventories. And you've got to handle the interest burden yourself. It's a risky game to play. And you can get wiped out if you don't have the resources behind you.

Q. In which direction should a small community go, if the fresh fish is the most economical and advantageous?
A. Moser: I don't think the small community can do it alone.

Q. Is there an opportunity for the old ice industry to revive, since ice is a key to your plan?
A. I'm not sure. The fishing industry has produced some connoisseurs of different kinds of ice. There are kinds of machine-made ice that presumably last a lot

longer than ice that's chipped off an ice block, because there's more cooling surface in flake ice. And that type of ice is produced by machine. I think that's probably the way to go in the future.

Q. In the village I come from, South Freeport, the harbor is considered saturated when the number of boats there reaches the number set by the local government or harbor master; no thought is given to types of boats and so forth. How can we put more boats in a harbor in a more satisfactory manner? Who has better knowledge of the situation?
A. Some towns going through this are shifting moorings, and that's a battle in itself. But even by the shifting of moorings in the harbor, they are at the point where it's just built up. I think it's just a problem that the local communities have to work on. I doubt anything can be done on the state level.

Q. It was mentioned that California is experiencing serious problems finding mooring space for growing numbers of boats. Is there any kind of state participation in management?
A. Most of their work is done with finger piers. One of the biggest problems in the state of Maine is that we've only got a two-month season here. When you talk about California, Florida, or the New York area where they go from six months to a full year – our problem is unique. I don't think they have overall mooring management except maybe in the towns themselves.

Comment. Dominie: The comment of the gentleman from South Freeport was one that we in the Coastal Program hear from many other towns, but it seems to be a matter of reallocation of space as much as providing additional mooring space. This conference provides you with an opportunity to talk with a gentleman from the University of Rhode Island, Neil Ross, who has worked with many communities on mooring allocation problems. Last night we discussed what the state can do to help towns grapple with this issue. He recommended that we think about something that Rhode Island did last year: they made a two-day aerial reconnaissance of the entire state. They looked at where the boats were, what kinds of boats they were, what facilities they had. That gave them an idea of whether it is over-populated, if there is more space. So that's something we might want to think about. And Paul Ring is here; through the Extension Service he works with harbor masters and harbor committees.

Q. One quick question for Mr. Wilbur. You indicated in your comments that one of the problems that your industry is facing is the lack of mooring space. I can see with the development of a container ship port and expansion of the fishing industry, that pleasure craft that are there now will have to move someplace else. Does that compound the problem that the small harbor communities are going to face in the future?
A. Wilbur: There is a conflict between commercial and pleasure craft in the harbors. No question about that. We see it in Southwest Harbor. In fact, you can almost draw a line down the harbor, and most of the pleasure craft moorings are in the more severe weather area. I'm not very familiar with Portland; I guess there are some problems between commercial and pleasure craft, but I still think there's room enough in a harbor like that to develop facilities for both.

STARTING WITH THE RIGHT INFORMATION: PHYSICAL DATA NEEDS AND ANALYSIS

Bryan R. Pearce, Coastal Engineer, New England Coastal Engineers, Inc., Bangor, Maine
James Sempere, Environmental Planner, Anderson-Nichols, Boston, Massachusetts

What data do you need and how do you analyze it when beginning a waterfront project? Much of the data is only now becoming available as the need for it is determined.

BRYAN PEARCE outlined the oceanographic parameters that need to be considered to insure that a structure is adequate to serve its purpose. Coastal processes can be deceptive, and this information can be used to calculate the probability and frequency of loss under given sets of environmental circumstances.

Waves – There is little available data on waves in Maine. There are several ways of measuring waves: by standing in the water with a yardstick or by using an electronic wave staff or an accelerometer buoy. The first method has obvious limitations. The two electronic methods also present problems: the methods are relatively new so there hasn't been enough time to gather statistically significant data; and the equipment is costly, precluding individual towns from making the investment. However, there are other ways of gathering wave information on areas that are planning development:

Inferred data – Casual observers have noted wave conditions at various times. Trained observers can often provide significant wave height (the same number you get when you measure the waves and average the highest one-third.)

Wave forecasting – The known quantities which govern wave development – fetch, wind speed, duration of wind – can be used to estimate wave heights. In some instances site-specific problems must be considered in making these calculations. For example, Portland Harbor is fairly narrow, and the waves don't propagate in a straight line but in all directions; therefore an "equivalent fetch" must be determined. Another example would be shallow water where wave motion is felt by the ocean bottom and dissipated through this contact.

Weather Service statistics – Statistical summaries collected by NOAA can, at some expense, be put in a form useful to people needing wave data.

By putting together all of this information it is possible to confirm wave heights that, up to this point, had only been assumed. The information is also helpful in plotting recurrence intervals which indicate how many times a wave of a certain magnitude might be expected in a given time span (e.g., a wave of five feet or greater might be expected only once in a hundred years). Other factors influencing wave configurations are: refraction – the bending of waves to concentrate their energy in one spot, such as on a headland; diffraction – a modification of other waves that occurs whenever the full wave front is not brought to a focus or utilized and that results in the curvature of waves around objects in their path (as around a breakwater).

Storm tides – High winds cause a "superelevated" sea level. It becomes a more serious problem if the storm tide comes in conjunction with the spring or unusually high astronomical tide. At these times damage from flooding and erosion can be severe. Storm tides can be calculated by computer or through a statistical analysis of data. (In Portland the hundred-year storm tide is about nine feet above mean sea level.)

Currents – There is a formula for computing average current velocities. The maximum current that would affect waterfront development in a given area can be estimated from these figures.

Icing – Winter icing occurs when radiational cooling takes place or when fresh water is introduced into the seawater, or both. The technology exists to prevent ice floes from inhibiting waterfront activity, but it is expensive. It behooves anyone considering the installation of ice booms to examine the economic feasibility of such a project.

Sedimentation – Before beginning a project in an area where sedimentation is a problem and dredging might be required, there are several questions that should be answered. Is the sediment contaminated; does it contain toxins that would prohibit the issuance of a permit for its removal by dredging? Is the sedimentation from bed load (typically, sand moved by currents or wave action) or suspended load (fine clay or organic material)? Will the completed project require costly maintenance dredging on a schedule that makes development infeasible? Sedimentation is not a well-defined science, so historical data provide the best criteria; to determine [dredging] intervals, look at nearby areas with the same type of sediments and the same energy environment.

Foundations – Not long ago in Maine a breakwater fell into the clay that formed its foundation. Get a soils engineer to measure the strength of the soil, then you can calculate whether or not your proposed structure is stable, or whether you might get what is called "sheer failure" and lose your structure.

Question and Answer Session:

Q. Is there any problem concerning federal floodplain regulations which discourage structures? You started with structures near the water, and you pointed to one that's gone, apparently because of a flood, high storm water. The federal government is paying millions of dollars on the Mississippi coast to take care of this. Are you limited when you make a recommendation as to whether something should be built, and where it should be built, in regard to how near the water it should be?
A. Pearce: Presumably we would all agree on where the flood elevation is. I believe that you can't get this structure insured if you build it in an area which is below the area that the government has decided is the hundred-year surge elevation.

Comment. Dominie: We asked Brian to look at the water side, from the water's edge outward and to tell us what data we should be thinking about in planning that aspect. So of course he's in the flood plain anyway and no structures, by definition, go

there. He's done a good job of outlining the range of data that towns have to think about when they're involved with waterfront planning of breakwaters, and piers and structures in the waterfront area.

Q. Can you determine from a general survey such as this the best places, the most suitable areas, for development? How much detailed information do you really need in terms of the sediments along a limited shoreline? Do you need to do borings? If so, how expensive is it to do this?
A. Pearce: There are probably a lot of answers to that question. On this study, core samples were taken, and it is expensive. The borings were $8,000 and the study was $1,500. So the answer is, yes, it's expensive. It's also quite specific because the types of sediments in an area vary quite a bit. It could be sand or it could be clay. In a lot of the harbors, the Corps of Engineers has already done a lot of work, and you'd certainly want to take advantage of that.

JIM SEMPERE has been assisting the towns of Bangor and Hampden, who are looking at their waterfront areas with a view to revitalization. They've been concentrating their efforts on getting the data they need to make decisions for future use of those areas.

Mr. Sempere emphasized starting waterfront planning and development projects with the right data. He listed a number of categories of information that affect waterfront development from the land perspective.

Physical data includes: (1) topographic conditions, and (2) slope characteristics which can be determined from U.S. Geological Survey maps and Maine State Planning Office coastal inventories. The Planning Office can also provide information on (3) geological mapping; and (4) soils data, becoming increasingly important because of the emphasis on "prime agricultural lands," can be obtained from the Soil Conservation Service.

A second area of information has to do with natural site characteristics which would include: (5) wetlands, (6) drainage problems, (7) flood plains where development is dictated by federal guidelines; riverine situations including (8) currents, (9) bottom condition and (10) depth; (11) land cover, vegetation – or the lack of it – has to be considered when beginning planning.

Man-influenced site characteristics include (12) current land use and (13) parcel ownership.

Traffic patterns are important, especially in planning for recreational development. Where are the (14) access points? What is the capacity and condition of (15) support facilities – parking lots, piers, bulkheads and docks? What provisions have been made for (16) recreational and open space?

Cultural resources must be considered. Are you going to be tampering with anything of (17) historical or (18) archaeological significance?

There are also numerous state and federal regulations governing these areas which a town should be aware of: e.g. – shoreland zoning, flood plain hazard, wetlands restrictions, navigation restrictions, dredging permit processes, protection of endangered species, or special acts which might apply (such as the Wild and Scenic Rivers Act for northern Maine).

An inventory of this type of information provides the basis for planning and development. After the inventory has been completed, the next step is to catalogue all the constraints to development and represent these limitations graphically. With this information in hand, it is possible to examine the area of proposed development with a better understanding of real opportunites and options and then to determine your own development objectives.

Question and Answer Session:

Comment. The data that has to be collected before any consultant can do any work with the town is a job the towns can do themselves and really save a lot of CZM money. I think that's an important area.

Comment. Dominie: That's a really good point. In fact, there are a lot of examples in this room of people that have done a lot of footwork themselves. The Camden Harbor Committee comes immediately to mind, because they spent six months looking into what data they had before they hired outside people for a specific task.

Comment. I work for the Regional Planning Commission and I'm the facilitator for a number of towns getting information. Obviously in any project your first step is your most important step. Perhaps the most valuable job a person can perform for a community in the early stage is to get the data mentioned. If you don't have someone in your community who has the time and willingness to perform that function, look to your Regional Planning Commission for that help.

Comment. From the consultant's standpoint, when town officials have data and information readily available, it saves them money and us time – and the resulting product is much better.

Comment. Dominie: It also keeps happy those agencies that collected the data in the first place. If they see a lot of consultants come in to assemble the data they collected, they wonder why all this money is being spent just to get their data to the towns. There are a lot of things that can be done to facilitate that process both by the towns and some of the regional agencies.

PROTECTING WATERFRONT AND HARBOR FACILITIES: FLOATING AND FIXED BREAKWATERS

One of the objectives of the State Planning Office's Coastal Program is to bring together towns which are pursuing similar projects. Because a number of Maine towns had begun to examine appropriate breakwaters for protection of their waterfront and harbor facilities, a panel was selected to discuss this topic at the conference.

Neil W. Ross (moderator), Marine Recreation Specialist, Marine Advisory Service, University of Rhode Island at Narragansett
Cortis Cooper, Civil Engineer, New England Coast Engineers, Inc., Bangor, Maine
Volker W. Harms, Professor, Department of Civil Engineering, State University of New York at Buffalo
Stanley White, Civil Engineer, Han-Padron Associates, New York, New York
Donald Martin, Chief, Coastal Planning Division, U.S. Army Corps of Engineers, Waltham, Massachusetts

NEIL ROSS, panel moderator, outlined the objectives of this group. The panelists, along with state and local officials, had visited four towns on Penobscot Bay which are considering constructing breakwaters: Rockland, Thomaston, Belfast and Camden. The panelists examined the problems in each of these harbors and, after some discussion, prepared consensus reports including observations and suggesting options. The reports contain a description of physical factors (wind, waves, bottom conditions, etc.) within harbors; breakwater options (with approximate size, location, cost); observations on harbor development. These reports are not intended to take the place of more site-specific, in-depth work.

To prepare the audience for the preliminary reports on each of the towns, Mr. Ross explained the physics of wave motion and build-up and described some of the more common types of breakwaters. These are:

rubble mound breakwater — as the name implies, this structure is made of a variety of fills, sometimes in combination with pilings and batter boards, sheet steel bulkheadings (subject to corrosion and electrical problems), etc. The solid front presented by this structure may cause reflected waves.

floating tire breakwater (FTB) — these structures are usually considered temporary. The two standard designs are the Goodyear configuration and the pipe-tire.

piling and batter board — single row of pilings with piling reinforcements behind, batter boards in front. This system works best under protected conditions.

crib type — logs or railroad timbers filled with rocks, sometimes with a cement cap. This structure presents a solid vertical front and may cause problems with reflected waves.

rigid piling pier — this structure could be multi-use, but very stable soil conditions are needed for construction.

log-boom — shallow draft makes this of limited use.

Mr. Ross cited resource materials that would be of interest to towns contemplating harbor development: Corps of Engineers, Shore Protection Manual, Vol. 2; Corps of Engineers, Small Craft Harbors: Design Construction and Operation; National Association of Engine and Boat Manufacturers, Marinas: Recommendations for Design, Construction and Maintenance; Donald Adie, Marinas, A Working Guide to their Development and Design.

DON MARTIN discussed the options for BELFAST

Belfast has a small harbor with a federal channel authorized for fifteen feet (working depth is currently about thirteen feet). There are approximately fifty moorings in the harbor for home-based and transient craft. The city has recently rebuilt the dock at the town landing and is considering purchasing land fronting on the harbor running 500 to 600 feet south from the town landing. Belfast would like to construct a 50 to 75 foot marina just off this land. The problem here is to protect this piece of real estate in an area where wind-driven waves develop over an uninterrupted water surface of seven nautical miles.

Other factors weighting the choice of breakwater for Belfast are:

Ice – the harbor receives freshwater inflow from the Passagassawakeag River. Freshwater inflow increases the potential for icing. This harbor experiences no icing problem at this time, but modification of the harbor by introducing some breakwater might tend to produce icing behind the breakwater. The movements of the Penobscot Bay Towing Company tugboats tend to keep the navigable channel ice free.

Tides – the mean tidal range at Belfast is ten feet. Due to the massive change in water volumes, it is felt that, with or without a breakwater, circulation will not be a problem. However, a fixed breakwater could have an effect on the regime of transported sediments back and forth in the tidal cycle and downstream with the river. Sediment transport studies should be considered as part of planning.

Depth and bottom type – the ocean survey chart indicates normal depth here. Bottom surface is soft and sticky with some indication of rock, possibly ledge. If ledge is found fifteen feet beneath the bottom surface (as it was at the new dockage), this fact should weigh in the selection of a breakwater system. A seismic study could be used to determine the presence of ledge in this area.

Conclusions: "The calculated waves for thirty-knot wind speed is three-foot waves with a 3.5 second period. And with a fifty-knot wind, we calculated a six-foot wave with a 5.5 sec. period. (The period is the time elapsed as waves pass a given point.) Due to this wave climate, we've discounted floating breakwaters at Belfast. We felt that they would not do the job required. Pile-held structures, such as wave fences or batter pile breakwaters, would not be a possibility if, indeed, rock is found fifteen feet below the ground level. Therefore, we are left with a rubble mound breakwater proposal for Belfast, and these do not come cheap. Roughly, the cost of such a breakwater, extending 800 or so feet in a kind of dogleg arrangement, would be between $600,000 and $1.2 million – depending on specific foundation conditions

and other factors. It should be noted that the marina enclosed by this 800-foot rubble mound structure would house substantially more boats than the proposal for 50 to 75 slips; it would hold probably 200 to 250 slips. I think they will find that a 50-slip operation will not pay for itself; they won't be able to get their money returned. Financing of such a venture could be quite a problem. Some money is available from state and federal sources, should the venture prove feasible economically, environmentally, and socially. Even my office, the Corps of Engineers, might be interested in such a project. Should that be the case, the project might fit within our small project authority, and the locals could contact our office concerning this point, if that is their desire. If we were interested in it and constructed it, possibly four or five years from now, it would become a federal project forever.

"Marketing the project to potential users is a problem that will present itself to the locals. The Belfast harbor is about the nearest Penobscot Bay harbor to the capitol region of Maine – the Augusta-Waterville area. It's also close to Bangor. If this area wishes to be competitive and attract a sizable number of permanent harbor users from these areas, we feel it's got to upgrade its services. The services in the harbor should include restrooms and shower facilities, coin-operated laundry facilities, oil and gas and diesel fuel and water at the site itself – right near the docks. These items ought to be available pretty much throughout every day. We think that the operators might consider a launch to ferry people from the town landing, or from a place closer to the marina itself, to the existing moorings in the harbor. They should increase the existing moorings in the harbor to allow for guest traffic and transients, and, perhaps by word-of-mouth, publicize the fact that Belfast is there and waiting to serve them. We think the city should beef up its services before they venture too far with a breakwater, to see if, indeed, it can attract customers and indicate to itself and other people that might be backing their project that they do have a viable plan and do have potential for developing a recreational-based marina project."

Question and Answer Session:

Q. You made a distinction between federal projects and small projects; could you elaborate on that a little? Do you have a contractor for one and does the government do the other?
A. Martin: No, there's no difference at all. They're handled alike in our contracting office. The difference is just the dollar breakdown. A small project can be handled through what is called "continuing authority," specifically Navigation Section 107 of the 1962 Rivers and Harbors Act allows the Chief of Engineers to distribute monies to the different districts and divisions as he sees fit for use in small projects with limited cost value. Currently the cost value – federal value – of a Section 107 project is $2 million. On a recreational project, the federal government will share costs fifty-fifty on those project features which it can contribute to and which are for the purpose of benefiting a recreational fleet.

Q. You referred to sediment transport. What agencies are available for technical assistance on sediment transport studies?
A. Martin: Specifically for that, we would advise you to hire a decent consultant – and our consultants are more than decent.

Q. You can't name any agencies that provide technical assistance?
A. Martin: Agencies in Maine? No, I do not know. CZM might know where you can find this. Holly?
A. Dominie: The Bureau of Geology is considering hiring a marine geologist who could give assistance to towns perhaps in setting up a study – not necessarily doing it.
A. Martin: There are a number of marine geologists in Maine with their shingles out.
A. Marcel Moreau (U. Maine): I would suggest contacting the University of Maine in Walpole. I'm doing a sediment transport study for the city of Saco right now.

Q. Ross: Does anyone on the panel have anything they'd like to add to the Belfast report?

Comment. There is one comment I'd like to make. The wave climate in itself, coming across the Bay, would not necessarily preclude the use of a floating breakwater. But what seems to be happening is that the waves tend to be propagating up the Bay and coming from the Atlantic Ocean, and that causes somewhat more severe wave conditions that do preclude a floating breakwater.

STANLEY WHITE reported on CAMDEN

Camden Harbor is heavily congested with commercial and recreational boats. There are yacht clubs, service floats, marinas and, at Eaton Point, a much used paved boat-launching ramp; boating services line both sides of the inner harbor. The cut between Curtis Island and Dillingham Point is fairly shallow; there are a lot of lobster pots in this area. The main channel between the Northeast Ledge and Curtis Island is quite deep.

Camden sees its problem as two-fold. First, at Eaton Point they are looking at a smaller breakwater which would protect the launching ramp and would increase mooring in this area for larger boats. Second, the town is considering a larger breakwater system, extending from Northeast Point out across the ledges, to protect against waves coming directly in from Penobscot Bay.

Case 1, The Launching Ramp

In this area seasonal protection is required. Thirty-knot winds generate four-foot waves which come straight into the launching ramp causing difficulties for people launching or retrieving boats during the summer months. The waterfall in the inner harbor brings in fresh water, but icing has not been a problem because incoming waves and the nine-to-ten foot tidal changes have tended to break up ice formations. The tides also maintain a good flushing rate which would not be disrupted by placement of a breakwater at Eaton Point.

Any breakwater system here should be located at approximately the ten-foot contour to allow access behind the breakwater. Pile-type, rubble mound and cellular fixed structures were all dismissed as being unjustifiably costly for this situation. A

floating tire breakwater about forty feet wide could be easily anchored and would reduce wave height about 60%. The cost would be about $50,000 for the 250-foot breakwater (compared to $120,000 for fixed pile).

A floating concrete pontoon system would also be effective in this area but was not discussed in detail.

Case 2, Complete Harbor Protection

The harbor requires year-round protection from high-energy waves traveling up into the bay. A floating breakwater, in order to be effective, would have to be of unwieldy dimensions and would be difficult to keep moored during winter storms. This situation requires a fixed breakwater system. [Author's note: Two different configurations were discussed, but slides were used, and actual geographical locations are not made clear by the transcript alone.] The structure would be quite massive and built in two segments to leave a gap between Northeast Ledge and Curtis Island to allow for flushing of ice floes. Because of this gap the floating breakwater at the launching ramp still would be required.

The proposed structure would provide excellent mooring area as well as protect the inner and outer harbor. However, the cost range would be $2-4 million, and Camden must decide if it can justify such an expenditure.

The panel recommended that Camden install its floating structure immediately to serve the summer boaters using the Eaton Point ramp. They suggested moving the breakwater during the winter months into the cut between Curtis Island and Dillingham Point to see what kind of wave climate they would have in this area for summer moorings. It might prove that another similar FTB in this area would calm the waves coming between the cuts enough to provide a good anchorage.

Question and Answer Session:

Q. The $50,000 figure that you got for the FTB [floating tire breakwater], did that include labor?
A. White: Yes, that's installed price.

Q. In other words, if they did it themselves, they could do it for substantially less?
A. White: I'm not sure how much less, but it could be done for less money – maybe cut it down by 10 to 15 percent.

Q. What's the usable life of a floating tire breakwater? I'm under the impression that they gather marine growth and on occasion they have been known to sink.
A. White: Others on the panel might be able to answer that better than I can.
A. Ross: I launched the first one in Narragansett Bay – the first one that also sank. The recommendation here takes into account having enough flotation to overcome the weight of the growth of the mussels. There hasn't been one built to current design technology that's been in long enough to tell, but we estimate you're looking at approximately a ten-year structure.

Comment. White: It also requires annual maintenance - going down and cleaning off the mussels once a summer.

Comment. Ross: Not necessarily. There seems to be a maximum volume that will grow, and then, as it increases in weight, it tends to break off. So there seems to be a maximum load on the floating tire breakwater.

Q. A problem affecting all harbors is monitoring winds. We need a method for monitoring winds without turning to the National Weather Service or some upper-echelon agency. Isn't there some way for the State Planning Office to help initiate a general monitoring program that would provide individual harbors with a reliable record of wind performance? None of us have this. What we need is guidance on procedures and low-cost equipment so that we know what we're talking about.
A. White: This is an area that did come up during our discussions. The data are there, but they're raw data. The planning commissions could get the money together to fund putting the information down; all the towns could use it.

Q. Isn't it important to get local observations? We've got enough interpolation at higher levels. What we need is on-the-spot observation. There's enough manpower to do it, but we don't know how to do it.
A. White: It takes many years to get good information.

Comment. Harms: We've put in a breakwater at Mamaroneck Yacht Club on Long Island Sound. The harbor master had an anemometer (wind speed and direction indicator), and he kept records over the years. He was interested in doing it, and it was quite useful for the yacht club. So I think it's not a costly thing, not a big effort, and it's interesting.

Q. How many observations would you want to have in 24 hours?
A. Harms: I think the man took readings every two hours whenever he was there. It's enough to be able to get some idea. . .I think it's very valuable.

Comment. Dominie: It is something that the State Planning Office could discuss with the towns. We could put together, with other agencies, a methodology for collecting it, standardize it, and then get this out to towns who could appoint the harbor master or volunteers to take the information. We'll be glad to work with you on that.

Comment. Ross: Obviously we need more site-specific information. I think there's an awful lot the local people can do. And there are instruments you can get that are not terribly expensive that will record over a 24-hour period.

CORTIS COOPER outlined ROCKLAND's options.

The site under consideration is near the town landing. The City of Rockland is contemplating putting a breakwater in front of the landing area to make it into a marina to provide better protection for the boats moored there.

The existing breakwater provides protection primarily from the northeast (where the longest fetch is), but 30-knot winds from the east, where it is somewhat exposed, can generate three-foot waves which cause significant problems for boats moored at the site. In winter, 50-knot winds generating five-foot waves are not unusual.

In Rockland's case, currents run at about 0.5 knots and would have no significant bearing. If a fixed structure were employed, storm tides would be an influencing factor. (Storm tides rose to 9.6 feet above NGVD during the major 1978 storm).

Although historically it has not been a problem, icing does occur to some extent, and it should be kept in mind if a floating tire breakwater (which is susceptible to ice damage) is considered.

The Army Corps of Engineers dredges the channel near the site, so some sedimentation might also be expected here. Sedimentation would be of greatest concern in the instance of a fixed system being placed. The depth in front of the jetty is about ten feet at mean low water.

Conclusions:

A rubble mound is probably the cheapest fixed structure Rockland could install. Other advantages of the rubble mound are: 1) it is less susceptible to sudden failure due to an extreme event (e.g. a strong Nor'easter); 2) it would tend to dissipate reflected waves from the seawall behind it; 3) it would be maintenance-free.

The preliminary design worked up for Rockland is twenty-two feet high and seventy-feet wide at the base. This breakwater was designed for over-topping by waves during extreme events, since an additional five feet would raise the cost by a factor of 1.5. The design doesn't account for settling in the foundation, which should be expected because the foundation is silty and subject to consolidation. The cost of the structure would be about $200,000.

The panel also considered a Goodyear floating tire breakwater for Rockland. A floating tire breakwater does allow some energy to go through the structure, so the city would have to decide how much of a wave would be tolerable behind the breakwater. The width of the FTB would increase with the increased level of efficiency, as would the cost. Assuming a three-foot incident wave to be reduced to one foot, the cost would be about $30,000; to reduce that same three-foot wave to .75 foot, the cost rises to $40,000.

Rockland does have alternatives to installing a breakwater. Two that seem economically feasible: 1) Since room is available, the current mooring area could be expanded; a shuttle service might be initiated to make this a more attractive option. 2) Mooring space could be added behind the existing Corps breakwater; it would be well protected and would provide for overnight berthing.

Question and Answer Session:

Q. What was the least expensive type [of breakwater]?
A. Cooper: The scrap tire, around $100 per foot.

Q. Assuming that Rockland, like most communities, has a big pile of tires out by the dump, how would you convert that into a breakwater?
A. Cooper: There are a variety of ways. One way is flotation such as urethane. You can get it in foam and pour it. Perhaps Neil [Ross] is best equipped to answer that question in detail.
A. Ross: If there's enough interest, I can give you a half-hour slide presentation showing both the Goodyear design and the pipe-tire. There is also a short movie of the pipe-tire in operation. But I can't say it in less than twenty minutes.

Q. I was just interested to know if it is possible.
A. Ross: Oh, yes, it can be done.
A. Cooper: It's been done successfully. There are probably fifteen to twenty floating tire breakwaters.

Q. There seems to be some variance in the life expectancy of the floating tire breakwaters as opposed to the fixed structures. With a cost of $40,000 to $50,000 versus a short life-span, can you justify putting in a floating tire breakwater?
A. Cooper: In lots of cases I think it depends on how much it will cost to borrow the money. If you can get some kind of exceptionally low interest rate to provide up-front money for the rubble mound, that's probably the way to go.

Comment. Harms: Those figures could go higher, but certainly not lower. The only field installation of the pipe-tire breakwater was in Mamaroneck, New York. It is forty feet wide (which would be quite adequate for the site you're looking at) and would be equivalent to an eighty-foot wide module type. The costs were roughly $100 per foot – for a 300-foot width, about $30,000. Cost depends, to a large extent, on who is constructing it. In the case of Mamaroneck, a lot of learning experiences went into the structure. I think the costs of such learning are in this figure. So, depending on how it's done – by a contractor who knows what he's doing or one who doesn't, or by community efforts in part – the figure could vary quite a bit.

Probably at $50,000 or more it doesn't pay to install a breakwater that has to be replaced every ten years. Ten years, I think, is a conservative figure. With maintenance it might be longer. But the idea with these structures is that they must be much less expensive; if they are not economically effective, we shouldn't consider them.

Q. Have you explored any other sites in Rockland harbor besides that one?
A. Cooper: No, we were specifically requested to concentrate on that site.

Q. The reason I ask is that there is an extensive breakwater there now, and I was wondering about the area behind it.
A. Cooper: I mentioned that. One possibility would be set up moorings in the area you are talking about and provide a shuttle service to the town center. That

could be very attractive because it would be very calm at night and provide a nice berthing place. The water is deep. It's not apparent, at least at this point, that you would need any other protection in that area.

Comment. It seems that the intent for the floating tire breakwater and the marina down in that area is geared more to economic development, not to actual use for mooring boats from out of town.

Comment. Cooper: It is my impression that both aspects are involved, but we were not directly involved with the planning aspect – just the design aspects of the breakwater.

Comment. Ross: As far as breakwaters are concerned my recommendation to anyone is: avoid them. Do everything you can to exploit other options. If you have an existing system, why should you spend money to solve somebody's problems somewhere else? Use what you've got if you can. It's cheaper in the long run. Use whatever resources and talents and options you have; exploit them to their fullest. If you want to expand marina capacity and there is a good, well-protected marina there (I'm not saying it is true in this case), perhaps the town should look at what can be done to expand this marina – instead of trying to put something somewhere else. You don't always have that option. If you do want to stimulate a redevelopment of the waterfront, that's perfectly legitimate. When people come in a boat, often they want a place to go. If you're going to put them at point A and you want them to spend their money at point B, then you have to provide a means to get them from A to B. That's another free enterprise service. You can have somebody with a harbor launch charge for it and maybe provide rubbish pickup and newspaper delivery.

VOLKER HARMS indicated that THOMASTON has the least severe problem of the four towns under discussion. With a 50-knot wind over a one-mile fetch, waves would reach heights of approximately 1.7 feet within a period of 2.5 secs. Under severe conditions with winds from the south, wave height may reach 2.6 feet. As waves approach along the channel, they refract somewhat into the public dock – the brunt being taken by the boatyard.

A tidal range of ten feet in this area would require a fixed structure of such proportions as to be cost prohibitive. A stationary breakwater might cause circulation and sedimentation problems. Building such a breakwater would entail extensive permitting procedures.

A log-boom was rejected as inadequate. With its limited draft, this type of "breakwater" would have to be of substantial horizontal dimensions (probably 60-80 feet) in order to quell waves sufficiently.

The most cost-effective solution appears to be an approximately 500-foot long floating tire breakwater extending from the shore at Brown's Point out to the beacon in the channel. If of the pipe-tire variety, the breakwater would have to be twenty feet wide to be effective, the Goodyear design would have to be forty feet wide. Either would cost about $25,000 to install, a price that could be reduced with increased town involvement.

Two problems that should be considered in installing an FTB in Thomaston are:

1. The breakwater actually would be sitting on the flats at low tide. Additional buoyancy would have to be added to counteract any weight added through accumulation of soft sediments.
2. During the winter ice floes up to one foot thick come down the St. George River (which flows in excess of two knots). Ice is also generated within the tidal flats. To avoid ice problems, at high tide the breakwater could be released from its anchors at the channel beacon end, swung around, and aligned with the embankment. It would be left in this position during the winter.

Question and Answer Session:

Q. What's the difference in sedimentation with the floating tire breakwater as opposed to the fixed structure?
A. Harms: There's an advantage to having a floating structure because there's room for currents to move underneath. The sediments carried by the stream on the bottom would certainly pile up at the base of a bottom-mounted structure. In terms of sedimentation, the FTB is much to be preferred. In real terms, the problem is getting all the permits [for the permanent structures]. In my experience, sometimes the choice is determined not by the latest engineering factors but by the difficulty in getting permits, or by aesthetics, etc. But here there are certainly real advantages to the floating breakwater. Where now the small particles are all through the water column, if you were to provide a wave barrier, then this structure also would be a barrier for those particles and they would tend to settle out in the lee. I think most of you have seen that along shorelines where you have an offshore barrier, or where a ship sank, that you have a depositional are forming in its lee. Where the sediments are in the water column and there is a calm region in the lee, you must also consider sediment accretion.

Comment. I disagree to a certain extent, because if you're talking about bed-load in shallow water, if you do put in a tire breakwater, you still may get a significant deposition because the waves, when they're there, tend to move the sediment which might not otherwise move.

Comment. Harms: My statement was that it was current flow in a river – things are governed by the flow of the major currents. And since the major currents, I am assuming – and I think rightly so – are not affected by the structure, the material will continue moving. If you add waves on top of it, we could escalate the complexity.

Q. What is the most efficient relationship between width of breakwater and wave length both on the pipe-tire and the Goodyear type?
A. Harms: We can't really say what is optimal. Both are very effective for short waves and become totally ineffective for long waves. And in between, you choose it. But basically the thing you really want to know is this: if you compare the two structures, the pipe-tire breakwater can be half as wide for the same effectiveness, but otherwise you have the same basic trends. The fifty-foot wave length might be attentuated by half; the thirty-foot wave length, maybe to .2; the twenty-foot waves to .1; and at ten feet or less, you probably won't see anything.

Q. What consideration would you give to the fishery in a river such as Thomaston? Certainly people in the town of Warren might get a little anxious if they thought their alewife fishery was going to be wiped out by a breakwater such as you're discussing.
A. Harms: From all the reports, these tire breakwaters are actually great habitat for fish. They have no known detrimental effects that I can think of. The tires are inert; they've been tested quite extensively and are not a problem chemically in any form. We use conveyor belting, which is not a problem. We're using nylon bolts. There's a steel pipe, perhaps, but I think you can live with that. I think disturbing fisheries will not be a problem.

* * * * * *

Ross: Just a couple of quick comments. There seems to be a great deal of interest here in floating breakwaters. We are not trying to promote floating tire breakwaters. A lot of people look to the use of scrap tires as the solution to this problem. It isn't; they do not work in all locations. There are more failures with the system than there are successes, and there are some good reasons for that. One reason with the early ones was that we didn't know what we were doing, so we can excuse that. We call those "research prototypes." I don't think there's currently any excuse for so many failures. I estimate there have been over a hundred FTB's built in North America, and nobody is doing follow-up studies to see what has happened to them all. But these are being built using out-of-date technology. I said, and I think Volker concurs, that the present technology is such that they should survive and work very well for ten years, but we're seeing them sinking in the first year, or falling apart, or drifting off. The reason for this, I believe, is that, since FTB's are inexpensive options, they are attractive to people who have extremely limited resources. In order to make the breakwater as inexpensive as possible, they might use inferior donated materials (e.g. bindings) which break up in a matter of weeks. They might stint on the flotation. Once the breakwater is installed, it might be neglected because there is no ready money for maintenance.

Too, breakwaters are being under-designed. I hear about breakwaters that are being designed now by competent engineers, but they're using information that's five years old, and there's no excuse for that. I'm providing as a service a constantly updated list of every publication that we know of on the subject; I'll be happy to share it with every one of you.

Another reason for floating tire breakwater failures is they are being placed in impossible situations. They're being put in areas where there are ocean swells coming in, or confluences of rivers. They are best for relatively protected areas with small wave heights and short wave lengths. They're not going to work elsewhere. We can predict where they're going to fail. Unfortunately, they are being put in where they are going to fail – in such a way that they will fail. So people are saying, "they're no good, they don't work." That's unfortunate. They are an option, but they are not the only option, and we have explored some of the other options here today.

I hope the four communities and the rest of you have profited from some of these ideas. It was a very worthwhile experience, I think, for the five of us.

KEEPING YOUR WATERFRONT/HARBOR USABLE: THE BENEFITS AND PROBLEMS OF DREDGING

Ed Langlois (Moderator), Director, Maine State Pier, Portland, Maine
William Anderson, Engineer, Prock Marine, Rockland, Maine
Harold Hutchinson, Town Engineer, Yarmouth, Maine
Vyto Andreliunas, Chief of the Operation Division, U.S. Army Corps of Engineers, Waltham, Massachusetts
Walter Foster, Area Biologist, Department of Marine Resources, Augusta, Maine

In his introductory remarks ED LANGLOIS indicated that over the years dredging and its related processes have become much more complicated (even evolving a new jargon) and that a more thorough understanding of the language and procedures would make the subject much less intimidating for those contemplating dredging projects. He outlined topics to be discussed by the panel that would contribute to a better understanding of the process. These include:

- new dredging and maintenance dredging of rivers, marinas, and private projects
- disposal of dredge material or "spoils"
- how dredging helps the fishing industry and recreational boaters
- costs of dredging: state assistance, cost sharing with federal/state/city governments
- permit problems.

WILLIAM ANDERSON discussed the two major methods of dredging in Maine and their related costs.

Clam-shell bucket method:

This method is used to remove only soft materials and can not be employed where rough bottom or rock are to be dredged.

The equipment involved includes:

- † tugboat
- † barge – The "bottom dump" type opens at the bottom, is about 110 feet long and holds 250 yards of dredge material; this barge is used when the dredge material is to be disposed of at a designated dumping site at sea. A flat barge holds 300 yards of material on deck; it is used when dredged material is to be taken to a landfill site.
- † bucket – This can vary in size. A 3½ yard bucket is common.
- † miscellaneous tools.

The cost for this type of dredging is $6-8/yd. This cost includes labor and equipment, but it does not include mobilization and demobilization (movement of men and equipment to and from the dredging company's home base); within a forty-mile radius this part of the operation could run $2,000 to $4,000. If the dredge material is

to be used as landfill, there are additional costs incurred in unloading barge/loading trucks, trucking the material, and, perhaps, in cleanup operations. The State of Maine has new regulations which also add to the total cost of the procedure: a charge of 15¢ for each yard of material dredged for upland fill, a $250 charge to lease the ground being dredged for a period of twenty years for permanent structures.

Blasting method:

This method is used for removal of rock ledge and is much more costly and time-consuming than the clam-shell bucket method. The same equipment is used, except the bucket is replaced with two 600 cfm compressors, two 2½-inch drills and drill bits.

Holes are drilled 4.5 to 6 feet apart using a grid pattern. Dynamite is dropped into the holes and is set off electrically from the barge. One of the factors lending to the expense of this project is the fact that, in order to dredge to the depth contracted, the holes have to be drilled below depth, subjecting additional material to blast and almost doubling the yardage to be loaded and hauled away. Most contracts allow the contractor two feet extra in fill and carting away.

Costs for this method of dredging are approximately $125/yd. Again, this does not include the mobilization and demobilization of equipment and crew.

With either of these two methods, the final procedure is sweeping the area to see that it is completely cleared to depth and that no obstructions remain.

In general, tugs and barges used for this work do about five knots when empty, and three knots when loaded, therefore dredging usually can not be done in winds exceeding twenty knots or in wave heights above four feet.

"Projects vary according to size, and they're all subject to time, travel, size and scope. And the location of the dumping site is important; it's preferable to dump at sea where there are areas set aside. Of course you're subject to the Army Corps of Engineers and Department of Environmental Protection regulations. It takes a long time to get their permits. We've waited sometimes four to five months for permits; sometimes we get them right away."

HAROLD HUTCHINSON discussed the maintenance dredging of the Royal River in Yarmouth and the numerous boondoggles that came in the way of that project.

In 1973 the Yarmouth Harbor and Waterfront Advisory Committee asked the Corps of Engineers to investigate the need for dredging the Royal River harbor basin. Studies were made by the Corps. The town was advised in February 1975 that funds would be available to do the work as long as the town could find a suitable disposal area and pay for construction of the dike to contain the spoil material.

Mr. Hutchinson went to work for the town of Yarmouth in August of 1976. Principal among his duties as town engineer was disposal of the materials generated by dredging the harbor basin. The project proved a testing ground for almost every problem that could beset this kind of work.

Acquisition of a spoils area — Originally the town had located the property, and the owners had agreed to its use. The Department of Environmental Protection indicated that the spoils area would have to be loamed and revegetated. At this point the owners of the land demanded that the town purchase the property.

Escalating project cost — The purchase of the land was the major unanticipated cost. The asking price was $150,000; the town finally paid $130,000. A dike to contain the dredge material was built at the cost of $20,000. Incidental expenses ran to $10,000. Excluding the actual dredging, which was paid for by the Army Corps of Engineers, the cost of the project at this point was $160,000.

Miscalculations, time constraints, added demands — The project was supposed to have generated 20,000 yards of spoils. When ice in the river stopped the project before completion in 1976, the figure had already reached 35,000 yards. Also, DEP had mandated that the spoils area be revegetated by June 1. The work was resumed in 1977, at which time private marina owners in the harbor basin voiced a wish to have their properties dredged while the equipment was on site. The only way the town would allow the private boatyards and marinas to pump into the spoils site was if they removed an amount from the spoils site equal to what they put in, trucking it away so the area would contain only the amount which had been estimated.

Permitting — In Yarmouth hydraulic dredges were used to pump the spoils through pipes running across the river on pontoons into the spoils area. The DEP requires a waste discharge license to do hydraulic dredging.

Public opinion — The dredging was blamed for the poor smelt fishing on the river. The process was noisy. The spoils area was a mess. A survey error cost the town first $4800 for protection of some trees, and ultimately another $2000 for replacement of those trees. The project came under criticism from various sectors.

Procrastination — The project will have to be repeated in 1983-84, and "you've got to figure three to four years to get through this blasted red tape." Thus far no one has complained that the channel or the anchorages are filling up, and it is difficult to stir the council to action until the problem becomes immediate. Special town meetings will have to be called and the same process started all over again.

Langlois: "You can take [Yarmouth's] problem and multiply that almost a million-fold for the entire United States. We find this problem in every port, in every community. We're all aware of it. . .but I have one message, and this is a message that I want to make sure is loud and clear. We have friends in the federal government. Even though there is criticism of the Armp Corps of Engineers and the Environmental Protection Agency and the Department of Fish and Wildlife, these are your friends and mine. The Corps' job is to go out there and get the work done. And EPA and Fish and Wildlife, it's their job to protect the environment. However, it is true, there is a delay, a lag, in getting the permits. Mr. Hutchinson is right, he should start today to get ready for 1985. This is true of all projects, because not only must you obtain the federal permits but you also have the state permits."

VYTO ANDRELIUNAS addressed some of the problems of managing coastal projects.

By law, the Army Corps of Engineers assumes the role of developers of the nation's water resources (including harbors and anchorages) and of regulators, rendering decisions on whether to issue permits to allow certain development to take place. This permitting is a time-consuming and cumbersome process, and the rules apply to our own [Corps] operations as well as the projects initiated by other interests.

Andreliunas indicated that Congress has erroneously included dredge material in legislation clearly intended to prevent hazardous industrial wastes from being dumped and polluting the oceans. The dredge material itself is only "mud. . .containing elements that are by-products of civilization. . .[that] were discharged into the water and settled out [in the mud]," and over thirteen years of Corps studies indicate no evidence of damage or adverse environmental impact associated with dumping dredge material in the ocean.

According to Andreliunas there is, in fact, evidence to indicate that dump sites provide preferred lobster habitat. The dump site at Ram Island, used for dredging Portland Harbor, could not be used again because of the proliferation of lobster pots in that area. "That happened at every dump site we went back to," and being "chased off" old sites, it has been difficult to find new locations for dumping.

Funds for Corps work are limited, and the decision to use federal funds for a given project involves weighing and balancing and trying to find compromises between competing alternatives; this is what the regulation process entails. In order to expedite decisions on the federal level, local and state governments should have examined their options in order to present their opinions in a single voice.

The Corps is charged by Congress with protecting navigation. While doing this, it must strike a balance between navigation interests, the fisheries and other resources. "We're charged with issuing permits for construction for structures and for private dredging. . . . Communities can recognize what is needed, but a problem is arising through overcrowding and competition for use of anchorage areas and even channel areas by lobstermen. . . . I don't want to regulate your harbors. You have the wherewithal to do it through the state authority. . . . If I come in, the solution I impose on you, you may not like. . . . These are things that have to be addressed on a local level."

Biologist WALTER FOSTER talked about the Maine Department of Marine Resources' concerns with coastal dredging. "[We have talked about dredging from the municipal point of view and from the Corps point of view.] The Department of Marine Resources is responsible for the biological aspects of marine resources. [From this point of view dredging constitutes] physical disruption of the bottom habitat and destruction, on occasion, in intertidal areas that are used for shellfish or marine worm production. The generation of suspended sediment, contamination load, in the rivers is increased, and there is physical injury to marine organisms if they happen to be in the bottom when the dredging is done. There is inhibition of fish passage in rivers. We are concerned about dredging at times when it [is a hazard to migrating fish or to lobsters, etc.] That is the type of thing we have to consider."

Brad Sterl , also representing the Maine Department of Marine Resources, noted that his organization is placed in a difficult position by being responsible for the protection of living marine resources and, at the same time, representing the harvesters of those resources who must have places to load and unload catch, and launch their boats.

The paramount problem is, perhaps, scheduling dredging projects for times when they will be least disruptive. Contractors often agree to dredge at designated times but fail to meet their schedules. Some cases where this happened were:

> The York River, 1975 – The preferred dredging time for this complex estuary with many migrating species was March, April and part of May. The dredging company indicated that they could complete the project in that period but did not enter the river until July 1. At that time DMR personnel and Corps of Engineer divers indicated that there were 8,000 to 10,000 lobsters in a 4.5 acre piece of bottom. The company moved out and did not finish the job that year.
>
> Cape Porpoise, 1976 – The dredging operation was delayed beyond the scheduled time. The company was given the option of coming back in the fall or removing the lobsters from the area before the dredge came in. The company considered it less costly to remove the lobsters. One lobsterman and six scuba divers were hired, and in nine days 5400 lobsters were removed from 2.5 acres of bottom.

Although DMR has found that such solutions are feasible when necessary, this isn't the way to operate.

Audience (DEP representatives) comment . I heard comments about the DEP and they were less than charitable. I don't think I'm going to change anybody's mind, but, by and large, our permit process runs about forty-five days. In some cases it will be a little longer, but forty-five days is about what you can count on.

Langlois: Both for myself and for the panel, I want to thank you for inviting us to participate in your program.

WATERFRONT RESTORATION:
THE EXPERIENCE OF NEWBURYPORT, MASSACHUSETTS

Newburyport, Massachusetts is a city of 16,400 residents; in the early 1960's the city began extensive redevelopment operations. Because this redevelopment project may indicate some directions for Maine cities JACK BRADSHAW, who was the Redevelopment Director for Newburyport from 1972 to 1978 and is now with the Massachusetts Department of Community Affairs in Boston, was asked to discuss the project.

In the early 1950's the last large businesses left Newburyport leaving buildings abandoned. Redevelopment in Newburyport started in 1962 when a group of businessmen, who saw conditions deteriorating around them, decided something had to be done and approached the mayor and the city council. By 1965 preliminary plans had been put together, and the city council decided to become involved with the new federal program of urban renewal. The 1965 plan called for the demolition of a twenty-acre site that was basically the entire downtown area.

The first major struggle developed in 1968 when a group of residents petitioned the city council, the Redevelopment Authority and the mayor to change the plan, to pursue a program that would prevent total demolition of the downtown area. Twenty-odd downtown buildings were restored. A new downtown parking lot and a landscaped "tot-lot" (recreation area for children) were built.

On the waterfront, what was thought to have been solid land was nineteenth century timber crib fill which had started to buckle. A key project was to try to stabilize that area so it could be used for a development parcel in conjunction with the bulkhead construction and the waterfront promenade. All the granite along the waterfront was salvaged and reused. The money for the seawall came from the Massachusetts Department of Public Works, Waterways Division. The money for the promenade was provided by Conservation Services.

The waterfront, which was in a state of collapse and decay, now has, among other buildings, a new firehouse and a maritime museum housed in the 1833 custom house restored in 1974 at a cost of almost $500,000. There are 1300 feet of waterfront that are open to the public. The promenade is very attractive and draws people to the area to watch the activity on the river.

A major effect of the redevelopment has been a rise in real estate values and the accompanying change in the makeup of local businesses and population. In 1965 a house on Main Street might have sold for $20,000, while today it would sell for $120-150,000. Average downtown apartments now rent for $375 a month where they used to rent for $75. Downtown retail space, formerly let for $1.50-2.00 per square foot, now goes for $11-13/sq. ft.

Mr. Bradshaw showed slides and a film of the Newburyport restoration project.

Question and Answer Session:

Q. How do you determine if restoration would be feasible? How do you know there would be sufficient business to justify the effort and expense?

A. Bradshaw: I must say that, in retrospect, we really flew by the seat of our pants back in 1968. Feasibility studies were done, and we had to convince HUD that restoration was the way for us to go. Business has done very well, although at the present time, because of the market and inflation, because of the cost of energy which means fewer people are traveling, it has become a little soft.

Q. Where did the money come from and who pulled it together?
A. Bradshaw: Originally, in 1965, when the city council approved the redevelopment plan, they had to put up so much money, and HUD put up the rest. That was not sufficient to do what had to be done in Newburyport. We had to get money from the state for the seawall, from Conservation Services, from the Department of the Interior. There were several state and federal programs. My predecessors and I were primarily involved in going after those monies and putting them together. When I left in 1978, I think the figure was about $14 million in public money that had been put into the project and about $9-10 million of private monies. There was a heavy public investment, but when I go to communities throughout the country to talk about restoration, I find that most of the cities are in far better shape than Newburyport was back in 1968 when we began the restoration.

Comment. Dominie: I think that the Newburyport experience is very instructive to Maine. It represents the kind of conflicts and opportunities that many of our small towns and cities - Eastport, Gardiner, and Bangor-Hampden area - are going to be increasingly more involved in.

DESIGNING AND PLANNING FOR WATERFRONT AREAS

For any waterfront planning to be successful, there must be a good working relationship between the town's representatives and the hired consultants or agency people working with them. The towns must provide a lot of direction – clearly indicating their goals; the consultant must weigh this information and provide designs and guidance. Talking about this interaction were: Dave Chadborne, Landscape Architect, Stevens Architects, Portland, Maine; Bill George, Waterfront Planner, Eastport, Maine; Terry DeWan, Landscape Architect, Mitchell-DeWan Associates, Portland, Maine; Evan Richert, City Planner, South Portland, Maine.

DAVE CHADBORNE began the discussion of Eastport's rejuvenation.

"Eastport is about as far east as you can go down the coast. It's a four-square-mile island, Moose Island. Ninety percent of the population lives either in the urban city area or in Quoddy village, which is the original housing development for the old Quoddy tidal project. So although Washington county is rather sparsely settled, there is quite a dense concentration of population here."

The initial planning study for Eastport was done under a National Endowment for the Arts Livable Cities Program grant. The city applied in January 1978; the grant was approved in May 1978. The total amount was $25,000 – $12,500 appropriated by the city matched by the funding agency. In September 1978, Stevens Architects began working with Townscape Associates (of Arlington, Massachusetts) and Eastport's seven-member planning board.

The Eastport waterfront was deteriorating due to neglect, economic decline, and storm damage. The buildings remaining had serious structural damage, and the original bulkhead needed repair. There were granite blocks and rubble down to the water's edge.

The downtown business district and "so-called urban area" were studied with an eye to a number of criteria: seascape conditions along the waterfront, condition of existing buildings and whether they were of historical or architectural interest, parking and traffic circulation, economic factors, and existing land use. Some areas of possible action were noted:

1. Extra parking was needed, especially if the diagonal parking spaces on the street were changed to increase the street's traffic capacity.
2. The Deer Isle ferry runs only in the summer but, through tourism, contributes to the local economy. Relocating the ferry terminal closer to the downtown area was discussed.
3. The need for a new bulkhead retaining wall was identified.
4. A major downtown entrance/exit route and the possible need for a loop connector (to get people back out of town) were considered.

Variations on these, as well as a possible waterfront plaza and promenade to be built in conjunction with the bulkhead, were discussed at three public hearings and a number of work sessions with the planning board. The group felt that construction of new buildings in the gaps on the waterfront was unlikely given Eastport's present economic environment, a twenty-foot tidal range which is a critical consideration, and the confining element of a steep slope.

Mr. Chadborne indicated that the initial concepts had changed due to "additional data. . ., changes in priorities, and the fact that concept planning doesn't always deal with the real world."

BILL GEORGE talked about how Eastport's plans have evolved.

"Eastport, the first city in the poorest county in the state, has lost fifty percent of its population since [more prosperous times at the turn of the century] . . . . It was a deserving candidate for a HUD grant, which it did receive from the Small Cities Program under a Community Development block grant provision. It was awarded $1.2 million, effective October 1, 1979." The earlier grant from the National Endowment for the Arts was oriented toward getting economic development started.

The priority project is building a bulkhead. Several years ago "Eastport could not get Corps participation because [there was no publicly owned land abutting the project]." At the cost of $60,000, through purchase and easements, the city has obtained the necessary land and will erect a Maine granite, rip rap type bulkhead. Three-quarters of a million dollars of the current grant is earmarked for bulkheads.

Lack of resources made extensive redevelopment impossible. However, Eastport, having a maritime history, decided in March 1979 to pursue the course opened by the state fish pier bond issue, applying $960,000 to building a finger pier (the structure originally planned was considerably larger) opposite the existing breakwater. This would provide a central waterfront area where recreational and commercial vessels could be segregated and managed.

The city has some problems. They do not have the local share of the financing and are looking to various sources for aid. [Mr. George indicated that this problem should be solved within sixty days.] Wave action, the large tidal range, and acquisition of materials all present problems to be considered in designing the bulkhead. The city lacks the necessary support facilities for a fish pier operation, and competition for space where these facilities might be installed is becoming apparent. However, communication has been Eastport's greatest problem; so, for this more realistic approach to planning, the city has tried to get a community consensus, involving business and industry, the Chamber of Commerce, service clubs and special interest groups (port authority, fisheries, historic preservation group) in the process. This has fostered a growing community spirit and generated group action which should insure the success of the project.

The Spring Point Shoreway in South Portland was the topic of EVAN RICHERT and TERRY DEWAN's presentation.

According to Evan Richert, the project, conceived five years ago, is "a symbolic turning back to the sea for the city of South Portland," in a time when urban waterfronts and waterways have been neglected in favor of other development and highways. Speaking of the South Portland area, Mr. Richert said, "Ferry Village in the 1850 census showed that every household in that neighborhood - save two - had some sort of connection to the sea, as shipbuilders and carpenters, ship mechanics, sailors and fishermen. And the industry that grew up around this population had very strong bonds to the sea. Thomas Knight was a master shipbuilder who operated a boatyard on Mill Cove and in 1854 launched the Phoenix, which was the largest clipper ship ever built in Portland harbor. The Portland Drydock and Warehouse Co. was the second largest boat repair facility on the East Coast in its day. A gentleman by the name of Joseph Dyer built gunboats in his shipyard to supply the North during the Civil War. Sardines were processed in two major facilities along the Fore River. The Marine Railway Corporation, which still exists today, ran an engine house and carpentry ship and outfitted Admiral Peary's ship for its voyage to the Antarctic. Portland Street pier, which was reconstrcuted this summer, was the point of departure and arrival for anybody who wanted to go between South Portland and Portland. And between 1941 and 1945, the New England Shipbuilding Corporation built 274 cargo ships - better known as Liberty Ships - for the World War II effort. But by the mid-1940's it was clear that the economics of the waterways had given way to the economics of the highways, and most of the water-dependent industries had disappeared."

While the last forty years have witnessed a decline in competition for space on the waterways, "In the last five years it has become increasingly clear that the severance of water-dependent industries from Casco Bay was a temporary phenomenon . . . . The economics of the waterfront is reviving in many ways, creating new demands and conflicts for coastal lands. Commercially and industrially, for example, fish landings jumped 22 percent by volume, 60 percent by value, between 1978 and 1979 alone. Portland harbor is experiencing a deficit of four thousand or more feet of berthing space - the equivalent of the entire lobster fleet. Prospects for new cargo activity are growing, especially on the Portland side."

The redesign of Willard Beach and the mile-long coastal area called Spring Point Shoreway is indicative of this revival which, inevitably, is producing conflicts among potential users. These conflicts are being dealt with in four ways:

1. Acquisition of property and municipal development of that property, especially recreation-oriented land on the waterfront (e.g. Spring Point Shoreway). However, tightening municipal finances may soon bring an end to this kind of acquisition and development.
2. Waterfront zoning. The city planning board has proposed a new waterfront district to be limited to water-related uses, but "Turning the clock back too far in this regard may be difficult."

3. Establishing, as part of the waterfront zoning procedure, performance standards for the waterfront. Zoning can segreate clearly conflicting uses and prohibit some obnoxious uses, but the concern here is with traditional uses (e.g., boat building, fish piers) which may conflict marginally with nearby residential areas. The need for standards — especially in areas of buffering, landscaping, preservation of public access, preservation of visual access — is critical.

4. Assisting private enterprise in seeking the investment necessary to redevelop and develop waterfront land for water-related uses. Currently being examined is the use of municipal industrial revenue bonds for enterprises on the waterfront.

"We believe that a variety of waterfront demands can be satisfied through these four approaches. And with the dedication of a mile of shoreland on Casco Bay to recreational, environmental, and aesthetic purposes in the form of the Spring Point Shoreway, we feel that we can pursue waterfront development in Portland harbor with a guarantee of rich and varied public access to the sea on the Casco Bay side."

TERRY DEWAN explained the planning involved in the development of Spring Point Shoreway, the recreation area between the now nearly-completed municipal marina and Willard Beach.

In the early 1970's Ken Curtis, a resident of the area, noted that the mile-long beach area was dotted with state and city "No Trespassing" signs. Thinking there ought to be a way for people to get from one end of this area to the other, he initiated talks with city manager, Ron Stewart.

In 1975, the Amatic Corporation donated a large piece of property at one end of the beach for the development of a new marina. As part of the marina planning effort, a master plan for the entire mile-long coast was developed. In 1976, the city received a "city-scale" grant from the National Endowment for the Arts. The Mitchell-De an firm was hired to provide the city with technical assistance and a long-term plan that could be developed phase-by-phase.

The first phase of construction started at Willard Beach with a $106,000 grant from the Bureau of Outdoor Recreation. Because of proximity, SMVTI students became very much involved in this project, completing much of the work that would ordinarily have been put out for bid. This degree of community involvement makes this an unusual project which "probably has a lot of applicability to other communities around the state." Phase two will extend the development along the Shoreway and eventually provide a linking path with Fort Preble. Phases three through five (and possibly six) will "link the Shoreway concept up with the marina."

Initially the state was reluctant to relinquish control of the property, but now the city and state have entered into a joint-use agreement as mandated by LD 1492. This piece of legislation accomplished four goals:

1. It preserved the open space character of Southern Maine Vocational Technical Institute and the shorefront on Casco Bay.
2. It preserved the remains of Revolutionary War Fort Preble.
3. It limited further development of the campus (SMVTI) from this area called "the green belt."
4. It guaranteed the right of free access on the waterfront.

A slide show gave evidence of how abused and neglected coastal land can be attractively rejuvenated to meet community needs. The work done in this area has not only increased public use but has spurred economic renewal by attracting private money to the area.

Question and Answer Session:

Q. When I look back at the Newburyport situation, where they built a park after renovating the interior core of the city, and I see the outline of this park, I wonder what pressures might be felt in the future for developing commercial enterprises at the SMVTI campus or in that general neighborhood? Do you envision that?
A. Richert: I don't see commercial pressure; I see condominium pressure. There are two or three sizable tracts of land with very nice views, and I know that there have been several proposals for that type of development. I don't automatically object to that. I think the city ought to pick up some more land to preserve as back-up to the beach. The planning board has opposed that and the city council turned it down. So I'm not sure the city is going to be willing to expend the funds to do that. Our approach, I think, is going to have to be to make sure that standards of performance of development are of top quality in terms of preservation of views, environmental standards, and that sort of thing. I think the pressure is there, and I think that type of development will happen within the next five years.

Comment. In a lot of communities, recreation is seen as a frill, but today I think we've seen examples where recreation serves as a catalyst for economic development and improvement. I think that is quite important to keep in mind. We have natural areas in Maine that, quite frankly, have been taken advantage of and destroyed, especially at the southern end of the state in the beach areas. If we could preserve the natural areas near the coast like this, it would enhance the property values and the economic development of the entire area.

Comment. Richert: I think you're absolutely right. Where we [in South Portland] might feel commercial pressure — in fact, I hope we do — is at the periphery of the marina. I think that is very logical.

Comment. I think, indeed, when cities look at their recreational spaces and the commitments for maintenance costs that have to be made when they upgrade and develop those recreation areas, it must be combined with a sense of the related economic development. In a sense, the plan should be both an economic plan and a recreation

plan to relate the development potential to its economic benefits and relate that to the additional maintenance costs of the facility. If you couple the two, then it makes a lot of sense.

Q. Bill George, you mentioned that, unlike South Portland, in Eastport there is private land ownership. You mentioned easements and other means of acquiring land. Could you go into a little detail on that?
A. George: What we're doing is treating the shoreside for bulkhead purposes similar to the way you would if you were taking an easement for a sewer or water line. We have taken a sixty-foot path on which the bulkhead will be built. Of course, we have a second covenant because we need permits to begin construction this year. We took that as a temporary measure with the understanding that if funds became available from some federal source that we would acquire at fair market value. But the landowners are not [reluctant] to committing an easement for the general community benefit at this time. It's very sound legally and these are in hand.

Q. Are the easements just for construction or for public access all along the water?
A. George: It's for public access – in addition to maintenance and construction of the bulkhead.

IMPROVING HARBOR AND MARINA SPACE

How do you figure out the best use of the space within the harbor itself? Four panelists addressed this issue:

Chadbourne Gilpatric, Secretary of Planning Board, Mount Desert, Maine
Willard Wight, Harbor Advisory Committee member, Camden, Maine
Kris Horvath and Brian Mellea, Marine Resource Management Inc., Cambridge, Massachusetts.

Mt. Desert and Camden are two locations where much has been accomplished with small coastal grants and a lot of volunteer effort. CHAD GILPATRIC presented Mt. Desert's solution to management of harbor space.

In Mt. Desert, one of four towns on Mt. Desert Island, there are four harbors: Northeast Harbor, Seal Harbor, Somes Harbor, and Pretty Marsh Harbor (also called Bartlett's Island Landing). Every summer approximately 500 boats are moored in these harbors, 300 in the Northeast Harbor complex alone. Northeast is the most accessible of the harbors, has deep water, is well protected, and offers a number of facilities. It has been moored in for seventy-five years; Seal Harbor for about the same period; Somes for a much longer time.

It became increasingly clear in 1976-77 that congestion in these harbors was a real management problem and was creating safety hazards.

Mt. Desert was interested in stability, not growth, and the first order of business was assessing where the boats in the harbors were from, their design/use, and their number. The work started in Somes Harbor (a large harbor with limited mooring area), and with the completion of that survey, certain problems became evident:

1. small boats had anchored in deep water that would accommodate much larger boats;
2. moorings put out for individual use or for rental had been placed haphazardly;
3. many moorings hadn't been inspected and were unsafe.

Northeast Harbor contained 230 tightly packed moorings. The same problem of random dispersal prevailed. Other problems shared by the harbors in town came to light:

4. very wayward winds made boat movement capricious, some bow east, others bow west;
5. registration procedures had broken down;
6. although each harbor had a harbor master, few knew who he was, what his authority was, or from where/whom his authority was derived (although the town ordinance on harbor management did outline his authority and responsibility to specify and locate moorings);
7. there were many neglected rules and regulations.

It was decided that Northeast Harbor would become the focus of a program that would require of every boat owner certain information about his boat and his mooring to discover if the two were compatible.

A volunteer group was formed; a series of "minimum information requirement" forms was drawn up; and the town selectmen were persuaded to require every mooring in every harbor to be registered or re-registered.

Questions about the best types of moorings for prevailing currents and bottom types, anchors and lines, proper mooring design were asked - these led the group to seek the help of experts in mooring technology. A table was developed indicating type and weight of mooring (stone is recommended for Northeast Harbor) to be used by a boat of a given length with correlating maximum beam. The boats are further categorized by type: launch, lobster boat, dragger, cruiser, auxiliary; this categorization determines other specifics of mooring design and situation.

In the spring of 1980, 101 unsafe moorings were taken out of Northeast Harbor. Over half of these have been restored, and a new mooring pattern has been put in place indicating one area where moorings are 75 feet apart, another where they are 100 feet apart. This pattern allows continued regulation of speed within the harbor and secures access for large visiting vessels by leaving channels open. All moorings are identified by number and, whether rented or individually owned, they are assigned by the harbor master.

Northeast Harbor has a town-owned marina with many facilities, and, in addition to the mooring spaces, there are now thirty-eight leasable berths in the marina for vessels up to 100 feet.

With the institution of these regulatory changes and reinforcement of the harbor master's duties, Mt. Desert has solved its problems in ways that serve boaters and conform to the public interest.

WILLARD WIGHT talked about Camden's mooring problems and the options being examined by the harbor advisory committee.

In 1959 a government maintenance project removed, then reset, all the moorings in Camden Harbor. The basic mooring layout in the inner harbor was done according to priorities dictated by the town, and a channel was put in going from the inner harbor in the direction of Northeast Point. The moorings in the inner harbor are used by abutting property owners, fishermen, vacation cruise schooners, and some private pleasure craft. For mooring locations in the outer harbor, abutting property owners have preference; resident and non-resident taxpayers also moor in the outer harbor, as well as many transients.

Still, conditions are crowded and there are conflicting views among fishermen, vacation schooner operators, and pleasure boaters on the use of public floats and wharves. Local ordinances put into effect in October 1977 (and recently updated) provide a base from which to operate; however, the harbor committee is looking forward to an improvement of facilities which will help the situation. Coastal Program funds have been obtained "to improve the utilization of the facilities for public use." The town has also received a grant for access research.

To improve and better use the public landing facility at the head of the harbor, the harbor committee considered installing a municipal marina. Tec Associates, a consulting firm, put together three alternative plans. As part of their 1980 Coastal Project, two of the three areas have been explored: 1) hydraulic probing of the base area was done to see if a municipal marina is feasible; and 2) the committee examined the possibility of installing a floating tire breakwater to protect the landing. During the next eighteen months, Coastal funds will be used to determine the feasibility of a municipal pier on the site of the old Eastern Steamship wharf. If a multiple-use facility could be erected there, this single project would accomplish a great deal toward protecting the launching ramp and alleviating some of Camden's other harbor problems. However, the committee will choose a course of action only after its usefulness to, and acceptance by, the townspeople is assured.

Q. Are the harbor regulations adequate?
A. Wight: They're only as good as the harbor master's enforcement. I'd like to champion the adoption of universal regulations - at least for Maine.

Q. Does the community participate in the affairs of Camden's harbor committee?
A. Wight: Actually, action rests largely with the activities of the committee. When we go to town meetings we're well prepared; we have (our position) well thought out. We do change our minds to adapt things to accommodate the various harbor users' thinking (as we have with the harbor ordinances).

KRIS HORVATH began the discussion of Vineyard Haven Harbor in the town of Tisbury, Massachusetts (on the island of Martha's Vineyard) by describing the four-part study he and his associates are now doing.

A large breakwater provides the only shelter in the harbor. Fronting the water are commercial and residential areas, a lot of undeveloped waterfront, and a beach which is unused because of pollution and boating traffic. There are three major docking facilities in the harbor. The steamship authority is the prime transportation to the island carrying freight, bulk cargo, and the passengers which swell the summer population of Martha's Vineyard.

The study is divided into four parts.

I. THE PUBLIC PARTICIPATION PROCESS consisted of a series of public meetings, questionnaires and personal interviews. The objective here was to identify key harbor issues and understand which users perceived those to be issues. The plan-

ning board, waterways advisory committee, selectmen, conservation commission, and board of health helped refine the list to a more manageable number of areas for further investigation. Also as part of this process the regulatory jurisdictions of different agencies were examined and policy areas set up so responsibilities would be specifically outlined and conflict eliminated.

II. A RESOURCE-BASED ANALYSIS tried to determine the levels of resources in the harbor, how they relate to each other, and the capacity of the harbor to sustain particular types of activity. For example, given the level of sheltered protection provided by the breakwater and the bathymetric configuration of the harbor, how many vessels could you moor, given various mooring arrangements? If you expanded the breakwater, how many more vessels could you moor? At what level does the amount of boating in the harbor affect environmental quality and preclude swimming or the taking of shellfish? How are commercial fishing operations affecting/affected by other harbor activities? Understanding these relationships is helpful to a town in identifying appropriate levels of resource allocation.

III. Through "input-output" analysis and development of "regional multipliers" the study analyzed economic linkages of the waterfront and the island economy. A new fish pier, for example, would be examined not only in terms of costs to and revenues for the town, but also in terms of jobs created and additional sales generated. The study indicated that for a one dollar increase in the level of shellfish harvested, there was a three dollar increase in the level of total sales. In oil shipping, one dollar added brings $1.01. This type of information will help the town decide which types of harbor activities to promote.

IV. OUTLINING A COURSE OF ACTION. "Obviously with a study as broad as this, we have to give some guidance, outlining: specific implementation steps and funding sources for types of projects, permits, and additional studies that might be required."

BRIAN MELLEA discussed some more specific findings of the Vineyard Haven Harbor study.

In order to understand the harbor's limitations in relation to the needs of various water activities, "We looked at land ownership to get some sense of the waterfront interests, so the town could set priorities in a manner that recognizes, say, the large number of seasonal visitors to the island. We measured the depth so that mooring and berthing plans could be better put together. We put together a water surface usage map, which attempted to illustrate the conflict in the harbor among various water users."

The study focussed on only a small set of the environmental issues facing the harbor, including fecal contamination from recreational boating, odors, and circulation. For years it had been debated whether the harbor was well flushed or a stagnant lagoon. Studies indicated that the harbor is well flushed and can handle a "fair number" of recreational boats.

An area of confusion that needed some attention was the delineation of authority of the harbor master and the town. Harbor regulations in conflict with Coast Guard rules are now being revised.

Recreational boating presented some major areas of concern similar to those found in Maine towns: people anchoring in the channel and obstructing boating traffic, small boats in deep water, big boats next to small boats. At present 150-200 boats using a traditional single point mooring system can anchor behind the breakwater.

Some mooring and anchoring systems to increase capacity behind the breakwater were discussed. The town was most interested in a boat basin mooring area within the harbor where people could tie up and use the existing private facility. "There are other systems, such as the ninety-degree, which capitalize on boats tendency to swing together; this can only be used in very sheltered waters, but it gives some sense of how to meet the demand without having to build a breakwater or docks. A much more sophisticated system - boats tied at four points - is almost a docking system without piers; this system has been used in Southwich, England, and in some areas of Rhode Island and Connecticut. . . . There are traditional single point moorings coupled with a docking system. . ."

The next option for the town is building a breakwater, something that has been talked about since 1897 when the current breakwater was improperly positioned by a work crew while the engineer was away.

Vineyard Haven Harbor is an indentation of the ocean with complete exposure to the northeast and a fetch of twenty miles between the island and the Cape. Floating breakwaters were dismissed as inadequate. Other options suggested were:

1) moving the existing breakwater out to where it was originally planned,

2) dramatically increase the anchoring capacity of the harbor through better use of available space, or

3 & 4) "smaller options on the south side of the harbor." (These were not discussed in detail.)

The Corps of Engineers, contractors, and others helped provide cost estimates for each of these suggested projects.

"Finally. . .we also examined links between water activities and the land (public access). . .to (provide insights into) putting together a management program that not only protects the harbor's ecology and enhances the commercial fishing activities on the island but protects the historic charm of the town."

PUBLICLY-OWNED MARINAS: DO THEY MAKE SENSE FOR MAINE COMMUNITIES?

John Frawley, City Engineer, Bangor, Maine.

A number of Maine communities are thinking of marinas – the river towns as well as those on the open ocean, Casco Bay and Penobscot Bay. The project discussed in this session provides an example of local commitment leading to regional involvement. Hampden and Bangor are the municipalities involved. JOHN FRAWLEY, Bangor city engineer, discussed the project. Lewis Bone, Hampden city manager, was also present.

The project on the Penobscot River is still in the planning stage. Bangor owns little property on the river (the major land holder is Maine Central Railroad). It does, however, own one small parcel with a dilapidated public landing in Bangor and a second 28-acre parcel (a played-out gravel pit) with 1200 feet of shore frontage in the town of Hampden. This 28-acre parcel is on the upper edge of the scenic portion of the river, and Bangor would like to dedicate some of the land for a marina. Bangor would develop the project, help with grants and in the design and construction. The actual operator or owner would be the town of Hampden.

There are a number of facilities that can constitute a marina or "boat service facility." Determining which of these will be operated by the municipality and which will be privately operated is a problem the city must face. Mr. Frawley developed lists for three groups of facilities with recommendations for control of operation.

I. Basic Facilities which are less costly to build or maintain and which should be publicly controlled are:

1) boat ramp to provide access,

2) moorings (or moorings might be placed by individual boat owners),

3) landing dock.

Regulation of such facilities would probably require a part-time harbor master.

II. Facilities which may be publicly <u>or</u> privately owned include:

1) rest rooms,
2) fresh water supply,
3) power hook ups,
4) telephone,
5) trash disposal,
6) parking,
7) various concessions (ice, laundromat, showers),
8) picnic or camping areas,
9) boat slips.

This size operation would require a full-time harbor master who would need the complete co-operation and support of the town council.

A municipality might be in a better position to undertake category I and II activities because it would have more access to state and federal funds for their construction through such agencies as the Bureau of Outdoor Recreation, the Economic Development Administration, and the state boat facilities fund. The municipality can borrow money at six or seven percent (considerably under the private rate). Also, public control of these facilities would insure their maintenance and long-term quality.

III. Facilities which should fall to the operation of the private sector might be:

1) marine supplies,
2) grocery store,
3) boat repair services,
4) boat sales and rentals,
5) fuel – diesel, gasoline, oil,
6) lift facilities (or storage provision if land is available),
7) restaurant or pub,
8) transportation link to local communities,
9) cruise boats (for people who don't own boats).

Bangor currently plans to develop as much of the facility as possible on city-owned land, and then to try to attract a private operator/investor to put in fuel and some of the other concessions. There has already been some interest from the private sector, and the city is beginning to consider the relative merits of outright sale of land and leasing public land for a private facility. A future CZM program will examine this in more detail: what type of lease agreement can be put together; how will the revenues be split; who will be responsible for the maintenance of the facility?

Another possibility is the formation of a local area development corporation which could borrow money at lower rates and put up some of the facilities on a speculative basis for private operators to occupy.

One drawback of this project may be its location twenty miles from the mouth of Penobscot Bay with its numerous boaters. However, the large local population demanding access to the river, and the numerous complaints about the condition of the current facilities indicate that a marina would have a fair chance of success. How such an operation would affect the local economy remains to be seen.

Question and Answer Session:

Q. What's involved in having your land in another town?
A. Frawley: We have been careful from the beginning to sit down with both the town council of Hampden and the city council of Bangor and make it quite clear that Bangor should dedicate a piece of this land. We do have twenty-eight acres, and if we dedicate ten or eleven acres, it can do nothing but upgrade the value of

the eighteen acres we would retain. We just didn't feel we could develop it down there. Too, we pay substantial taxes on that old gravel pit, and we want to get rid of it.

If we have a full-scale marina in Hampden, which is only 1.5 miles from the docking in downtown Bangor, we could develop a satellite facility, upgrade our dock, perhaps beautify the one acre of land we have downtown, and put in a few moorings so that we can get some of the spin-off from the larger development in Hampden. Eventually, we hope to be able to sell the remaining land in Hampden for a compatible use. It might be a condominium or something of that nature, or perhaps some marina-related commercial activities. We would work in conjunction with Hampden on the land use of that area. The project will both upgrade the area and bring in revenues.

Q. What sort of timetable, if any, have you established for this project?
A. Frawley: We're in the process of doing an appraisal on the land to be conveyed. We will be making application to the Department of Parks and Recreation for a BOR grant for the first phase of this project. The other big thing is some required dredging; we're going to have to go through the Corps of Engineers' procedure. We are also working on that procedure now, gathering the data to complete the plans that we'll use for the dredging permit. We hope that we will see some construction next year. It's been a very long, slow process. We've worked on it a couple of years now, and at times it's been rather discouraging.

Comment. Dominie: It would be interesting to hear the Bureau of Parks and Recreation's opinion of the project. You've spoken extensively with them.
Bartlett: I've been with the Bureau since 1966 and we've been looking for an area on the Penobscot River in the Bangor area for a boat launching facility. This provides it; hence, we're very happy to fund it. John Frawley called me three years ago and said that the Bangor waterfront committee had an idea for this particular parcel of land. As he said, it has been a long time, but the thing is going to work out well. We've moved slowly and cautiously because of the situation with Bangor and Hampden. It seemed sensible for Hampden to be the owner. We've worked all of that out, and I think Hampden is happy. In this particular location it also gives Bangor and Hampden the opportunity to start with a small facility that has the potential for development as they see whether or not private people will come in. I think it's a fine project.

Comment. Only one caution I'd like to throw out here to anybody who is contemplating this: the long time that it takes to pull something like this together when you go beyond what John Frawley has outlined in category I facilities. South Portland is an example of this. It took us four years to get that proposal pulled together and actually under construction. During that four-year period, the private operator started a very similar operation across the harbor. Now we're in a battle with this private operator over unfair competition due to the injection of public funds into more than just basic facilities, so I would agree with John that everything under category III should be undertaken by private enterprise. You even have to be very careful about how much you do in category I with public investment. A half-million dollars is a pretty sizable investment for just basic facilities, but

that's what it took on the South Portland waterfront. Keep this in mind as you're working on a proposal of this type. Work closely with the private sector and try to find somebody to come in and take over these supplemental services and facilities beyond the basic facilities that the public funds would develop.

Q. What's the cost of Phase 1?
A. Frawley: The cost of Phase 1 will be around $350,000. It involves the basic facilities of boat launching ramps, some moorings, parking, beautification and landscaping of the area, and preparation of the area that might be occupied by private enterprise (both storage and marine service facilities). We have potentially two other phases that would do a lot in the way of boat slips and so forth. We feel that those will come with the demand, once the facility has been established.

Comment. It is unlikely that a private developer will provide parking, landscaping — things on which he can't get his money back readily. If a community is going to work toward providing some sort of facility, they need to provide the basics: power, water, sanitary facilities, pump-out facilities for the boats. The boat slips, for example, are something that the private operator is willing to put in.

Comment. When you apply for a grant to the HCRS, you do make definite commitments to operation and maintenance and to dedication for public recreational use in perpetuity. You want to make sure that you don't involve HCRS with plans that are half-baked, that you do your homework very carefully and approach us mainly on the basic facilities that do have a chance of prolonging themselves without a lot of the added features in categories 2 and 3 if there is not the demand you anticipated.

Comment. Frawley: I'm glad you mentioned that point. I guess I overlooked it in my notes. When you do accept federal and state funds, you have to have definite commitments to the operation and maintenance of the facilities and to public access. Any agreements you make with a private operator would have to embody all of those provisions.

Q. It's admittedly hard to measure demand, but it's true that lowering the price tends to increase the demand for any product. If you lower the price to zero by operating a public marina at no charge, that will give you a high demand. Unfortunately, it also implies that everyone in town who either doesn't want to or can't afford to own a boat is, in effect, subsidizing those that do because of the "opportunity costs" of public funds. If you're planning to invest $350,000 and you've borrowed at 6%, that would suggest that the opportunity cost of that money is $20,000 a year. Do you envision collecting fees to avoid subsidies from taxpayers?
A. Frawley: I hope that a large portion of that $350,000 is going to be federal and, perhaps, state money. Certainly there will be some fees, such as use of the launch ramp, and if we operate slips or some of the concessions. We don't expect the townspeople of Hampden to subsidize; they'd want it to pay its own way.

Comment. This is actually the point I was getting at about competition with private enterprise. In your case where the marina in Hampden is going to be the only one in that area, your fees could be set just high enough to cover your costs of operation and maintenance. But if there were another private operator in that area, your fees would have to be competitive with theirs so as not to have an unfair competition situation.

HOW DO WE MAKE FISH PIERS WORK FOR MAINE FISHERMEN?

Gayle Charles (session leader), Development Sciences Inc., Sagamore, Massachusetts
Aldo Ciomei, Stonington Lobster Co-op, Stonington, Maine
Geno Marconi, Portsmouth Fish Pier, New Hampshire Department of Resources and Economic Development
David Shaw, Fisheries Consulting Group, Portland, Maine
Chris Tupper, Ocean Research, Inc., Kennebunk, Maine
Lenny Stasuikiewicz, Manager, Pt. Judith Co-op, Rhode Island

Owning and managing a fish pier is a business. Traditionally, municipalities have encountered difficulties when trying to operate profitably a town-owned business.

GAYLE CHARLES talked about the Provincetown fish pier:

"[Provincetown] is a fishing town, a fishing port — the economics, the politics, the community situation has to do with 12-15 million pounds of fish. There are twenty-five vessels going out of there. It's the anchor of the whole Cape Cod fishing industry. . .and the tragedy of it is that nobody was minding the shop when this pier was constructed."

He presented those questions which, if they are answered during the planning and implementing stages of municipal fish pier development, might insure the success of the project.

The Politics and Policies

How can the political and administrative sections of town government be organized to incorporate a fish pier business into their operations?

Who has the authority and responsibility for management operations? All town agencies must come to a consensus on role delegation.

Who will administer the pier budget and financial matters? "It's very difficult to find people with the qualifications to get involved in the budgetary and financial forecasting disciplines that are necessary to run a fish pier business."

How are you going to deal with the revenues generated by pier operation?

Are you going to employ a pier manager and staff? Who's going to do the hiring? A commission? A specially set-up authority? The fishermen?

How will periodic maintenance be paid for and scheduled?

Who pays for damage due to negligence?

In whose interest is the pier to be run? The commercial or the recreational boat owner? The resident or the transient fisherman? Who is the commercial fisherman; does part-time count?

What is the pier's relationship to private enterprise — the processor, the dealer, the co-op? Will certain pier functions or operations be contracted to private business? How will leasing be handled and what are the terms of the lease going to be?

To whom will contractors and operators be accountable?

What are the operational standards? How are you going to insure that the prices charged are reasonable, that the services meet the fishermen's needs?

Who will have enforcement authority — the pier manager, the harbor master, the police department? "You have to have definite policies established about who prevails, who has the authority and responsibility." Too, a capable wharfinger who is respected by the fishermen should be hired and be backed up by town management officials.

How will the town accommodate public participation and interest group input?

In Maine, how can the pier be run to give fishermen the advantages of the developing industry throughout the state — processing, marketing, controlling quality, and any statewide benefits that might derive from the Portland project?

The Administration

Can informal management run a pier without additional town bureaucracy? Will a new department be formed or will pier management be put under an existing department?

How many employees will there be? Union or non-union? How much will they be paid? What about benefits?

How do the pier manager and staff formulate cost and revenue estimates? Should pier user charges be set by volume of fish landed? by value? by berthing time? by length of vessel?

Who will publish operating regulations, operating and maintenance schedules, and establish responsibility for contracting and purchase of ice, fuel, pier repairs, office space, telephones?

How will efforts be co-ordinated with processing and marketing sectors of the industry?

"There's a principle inherent in what I've said: basic agreements must be made in anticipation of the fish pier establishment so that misunderstandings that present almost insurmountable political and administrative community problems can be dealt with in the best way."

For successful operation, the town and pier managers must maintain open communication with pier users; this way many problems can be anticipated and acted upon before they reach crisis proportions. Another element of successful operation is establishing a mechanism within the town government for a periodic systematic review of fish pier progress and problems.

DAVE SHAW: I've been working with the town of Vinalhaven. The fear of competition is obvious, and probably there's the same feeling in Stonington. A public pier opens up access to the waterfront and to the availability of fish for a lot of truckers and people who in the past haven't been able to get a stake or a physical facility on the waterfront. From my work in Vinalhaven in particular, and also in Boothbay, that seems to be a particularly important issue: does this public pier create availability, or access, to fish that will promote competition for the people who have been there?

GAYLE CHARLES: I think that's a very important comment. This has never been resolved. But it gets resolved in almost a community way, in a social way. There are certain basic assumptions which are never stated or put on paper. Everybody knows who that pier is for. In Provincetown, in particular, if there's going to be a "foreign" boat in there, he's got to be a cousin, or his mother-in-law knows your father — that kind of stuff. Fishermen from Gloucester and New Bedford don't leave their boats alongside the wharf in Provincetown very long unless they have some kind of understanding with the people in town. That's one of the positive aspects of the accommodations. People can sort things out themselves on the water — more than town officials or bureaucrats or anybody else. They just do it. And some very good things can happen that way. That should be encouraged. People can run their own business and they're used to it. But there are some very firm disciplines and guidelines that have to be established so that can take place.

Comment. MARCONI: Basically what you're talking about is the state of Maine and towns developing their own fish piers. From my experience, the town has to own it completely, outright. The town may decide to let private enterprise operate the pier, but they should only rent it. The only outside operation on the Portsmouth fish pier is a fisherman's co-op, which is a trucking co-op with twenty-two members. All they do is lease a small office space and telephone. Other than that, the place is owned and operated by the state. I think that solves that problem there right from the beginning.
Reply. CHARLES: Maybe you've been very fortunate in New Hampshire. I know that on Cape Cod the state is the last gang you want to let over the bridge.

Comment. MARCONI: I'm not saying the state should own and operate the piers. I'm just saying that's the way it's done at Portsmouth. The fish pier is run under the Department of Resources and Economic Development, and when the pier was built and funded, the department set up a new Bureau of Marine Services. There are three fish piers: in Portsmouth, Rye, and Hampton harbors. The Bureau owns them and they have complete control.
Reply. CHARLES: That would certainly alleviate a lot of pressures. Provincetown is an example of complete lack of definition of authority and responsbility, whereas there's an example of authority and responsibility emanating from a political entity that is removed from the local constituency and community situation. . . . I wouldn't presume to suggest to anybody in the state of Maine how they should do this themselves.

MARCONI: This comes directly under Commissioner Gilman of the Department of Resources and Economic Development. He set up a pier advisory committee specifically for the Portsmouth pier. It was made up of a couple of dragger fishermen, a couple of gill netters, a couple of lobster fishermen, a couple of dealers. They advise him on pier operations, so the operation of the pier is removed and it's run by the state, but there is that local input. And the legislation which originally funded the building of the pier indicated that the town should have some control of design aesthetics to make sure it fit into the community and so on.

CHARLES: Could any member of the panel comment on that aspect of the institutional arrangements and the bonding issue and the way these monies have been delegated? What is the understanding with respect to ownership and management and operation of the pier?
A. MIKE MURRAY, DOT: Essentially, ownership and management of the pier facility will be within the community within which it is built.

DENNIS FOLSOM (DOT): We are looking for as much flexibility as possible when the towns work out their own plans. We are asking, in the agreements that we are setting up between the Department and the towns, that the town come up with maintenance and operations plans. Maybe we can help them and we're hoping that this session will help them. But it's up to them to come up with something that will work in their community. And we're looking for a commitment that they will operate and maintain the pier primarily for use by the commercial fishing industry, to maintain equitable access by both fishermen and fish buyers. If they do that, the details are going to be up to them.

CHARLES: In my opinion, that's a very supportive approach to overcoming some of the problems inasmuch as there is a standard, a policy criterion involved, and there is the opportunity for a community to take on responsibility and to demonstrate what it can do. . . . In the final analysis, a community can probably manage these things better than anybody else – subject to the legal and state and federal requirements. That sounds very hopeful.

LENNY STASUIKIEWICZ: I just want to go over a few experiences that we've had in Narragansett, Rhode Island. Our co-op is located in the town of Galilee. All the land that we're on is state-owned. We pay 15¢ per square foot for the land. We built a pier, 115 feet long. We rent a couple of other piers for unloading. We put up facilities for an ice plant, fuel. There are boatyards, machine shops and other business activities there.

We started our operation in 1948, and it seemed at that time that if you dealt with the co-op, you were dealing with all the fishermen; in effect, they were one and the same. At that time we were unloading quite a few non-member boats and looking to get more people because our whole business was based on volume. You have to have enough fish going through there constantly. At the present time, we run around 25 million at one location; and just around the corner, using a vacuum pump, we suck out somewhere around 60 million pounds of fish – menhaden, herring, and other industrial fish. We wanted to have an opportunity to expand so we worked with the Department of Environmental Management and got leases on certain pieces of

property. Then we found out that our facilities were not large enough to handle all the boats in the port. The directors of the co-op at that time decided not to take any more members. The fleet was growing within itself, buying larger vessels. Some of the members owned two or three vessels.

There were fishermen in the port who wanted to unload, but there was no suitable pier. These fishermen got together and went to the Attorney General's office. They [the Attorney General's office] had a talk with us and said, "Look, these guys can't unload. You haven't done anything wrong, but it seems as though, in effect, you're making the state a party to a monopoly because no one else can unload."

The point I am making is that, whatever kind of pier you put in, you probably should have some place where somebody else could unload. When you have a successful operation, at some point there just isn't enough room, so you would have to leave some space so someone else can get in. Otherwise, you get yourself into problems.

The other problem that I see is that the state of Rhode Island has all the piers. They are rented at $10 per linear foot on the size of the vessel. Once the state puts them up, they never look at them again. The only time they look at them is when they fall down. Then they work another three or four years to see if they can get enough funds to put some new ones in. There never has been any kind of program of preventive maintenance. It's a very important element, preventive maintenance. Once the town is given the pier, some arrangements are made for collecting for use of the dock, that money would have to be used almost solely for maintaining the pier.

CIOMEI: I think the use and ownership of the piers and the rental fees are going to be different in each community. Take a small town like Stonington where there are four other lobster-buying and fish-buying places which are tax-paying businesses. Then you go to a federally financed pier. The fees should be high enough, or at least equal to what it costs private businesses to operate. The unloading fee should not be just enough to cover maintenance. If tax money is put in, the income should be used to reduce the taxes in the community.

Private businesses hire quite a few people. With a publicly owned fish pier, some of these businesses are going to be laying off full-time employees, because they are not going to have the volume of business to keep their people working.

On top of that, as I understand it, there will be no services on the public pier . . .only unloading facilities. Another pier across the way is being improved for recreational use. That pier will have some types of services. So we're talking about two separate piers. There won't be much maintenance, because they're built of granite. Only the pilings and things like that will require maintenance.

I can't see where the fish pier is going to improve the income of the fishermen. I think we're wasting too much money on fish piers; some of it should go into some processing plants so that the fishermen themselves can get a higher return for their products. In the town of Stonington, they're paying 6¢ a pound for trucking

the fish into Boston, plus the commission on the sales, plus incidental expenses. The pier itself is not going to be that beneficial to the fishermen. I would rather see less money put into the pier and more money made available for the processing and handling of the product.

CHARLES: That's an idea that would certainly have to be accommodated and considered in the formulation of any policy with respect to these piers. I mentioned earlier the importance of public input and public participation. If there are qualifications and reservations about a pier, or how it's managed, or how it's run, or for whom it's to be run – they must be filtered into the system to be incorporated or accommodated. You need the cooperation of as many groups in the community as you can get for the pier to be a success, and these issues must be addressed at a community level.

TUPPER: I think that what Aldo has just expressed shows that any political decision has to be addressed on the local level. I think the state program is working well in that the directives from the top down aren't that inflexible; there's room for local adjustment. . .perhaps each community contemplating pier construction should start by stating its objectives. Why are you putting in a fish pier? How is it going to help get a better price for the fishermen? (And there are ways that it can help.) How is it going to coordinate with the operators in town and with the statewide objective of trying to coordinate an entire system to pull together Maine's diverse fish landings into something of consistent quantity and quality.

CHARLES: And those objectives have to be addressed at the local political level. I think that perhaps in the conversation so far I might have had a tendency to overdramatize, or overemphasize, some of the negative aspects of all this. Let me now give you just a general impression that all is not lost. My work takes me up and down the coast. This year I think I've been in every fish port from Hatteras to Portland. In all these communities with different histories of government people have made arrangements and accommodations. And in each one of those communities the operations are doing the best they can to manage and cope and are finding it more and more difficult because of the pressures on them, the greater sophistication in the fishing industry, the greater volumes, the greater values. Yet they have managed and they are managing. The message and the challenge to Maine is to benefit from these cases, to learn from both their failures and their successes in evolving workable systems for your own pier projects.

Question and Answer Session:

Aud. Comment. I have eleven years experience in state and federal government – most of it not in fish piers, but I've been exposed to planners of various kinds. I'm an engineer. I look at planners as optimists and engineers somewhere in between. [optimists and pessimists]. In the Stonington fish pier that I've had some involvement with, and that Aldo has discussed a little, we had some early planning that I think was optimistic – the feasibility study exposed only the tip of the iceberg as far as problems that would be encountered, so during the project development stage we're having to refine the feasibility study.

So Maine's fish pier program seems to have come along at a good time with the 200-mile limit, the commitment from EDA for some federal money, and fish pier bond issue. Here we are with the money coming together, but we have a lot to do in a fairly short time to get these details worked out. I'd like to caution people that a fish pier is not as simple as it seems. It's not as simple as putting a few loads of granite out there and filling them up and paving it over. There's a heck of a lot more involved. We're learning as we go.

Another comment connected with some of Aldo's comments: a lot depends on what growth will actually take place in fishing in this area. If growth doesn't take place to a great extent, then these new public facilities may hurt the existing private facilities. If growth approximates what has been projected, then I think there is going to be plenty to go around. Time will tell.

Comment. It seems to me that the provision of these piers through the bond issue relieves the private sector of the need to invest in those areas. Perhaps as the unloading shifts to the public facility, those [private] businesses could in turn reinvest in the processing rather than trying to maintain what may have become an obsolete facility. So by the public sector providing the pier – just as the public sector provides the highways – private interests would be freed to take the fish the rest of the way to Boston or wherever, to invest in local processing, which should return more to the fishermen.

Comment. I think if this pier in Stonington is constructed, it will probably be the only pier in the area that has water depth sufficient for 60-65 foot vessels. Vessels are grounding out now in anchorage areas. A 55-footer has trouble getting up to a dealer's dock at low water, sometimes even at half-water. So I think that's going to help. I tend to agree with Dennis that there's just as good a chance that construction of a public pier will stimulate the fishing industry in a town like Stonington and bring in more activity. I think all of the businesses in the area can profit by that. Local dealers can purchase from the fish pier as well as dealers from Ellsworth or Bangor or anywhere else.

Q. What effect does a public fish pier have on pricing and the amount the fishermen do, in fact, realize per pound?
A. Charles: These are my perceptions having to do with some fundamental principles of the working of fisheries marketing systems. With a better operating facility at the point of take-out, you have a better chance of supporting your products with the facilities that will enable that product to be of better quality. You will, perhaps, having that basic facility, be able to put add-on facilities so that you can hold or disperse your product at your convenience, rather than the tractor-trailer's convenience. Having a better facility will enable you to accumulate more product over the fish marketing week, which runs from Sunday through Thursday. In being able to aggregate the product, you'll be able to have control over it, to put together a larger range of species in larger amounts. You begin to develop the telephone muscle you need in negotiating prices in the major markets. That's just dealing with the fresh, going through the traditional channels. You have an opportunity to package your own product and, in cooperation with other communities, to get the cash flow, to get the management, to buy the trucks, to get the container to put on the airplane to Paris. . . . One of the biggest issues in the fish

business is not just the basic one of quality; it's getting the quality at the right place at the right time. Quality is also a function of the array of species you can offer. Now, the bigger the product, the more muscle on the market, the more you can use leverage, the more you are able to manage your business to take advantage of the new marketing opportunities. That's probably an oversimplification, a vast generalization, when you consider the nature of fish marketing. I haven't even gotten into the frozen. I haven't talked about processing facilities and where they're going to be. They're all necessary ingredients. All those things come out of making one capital investment, which generates the cash and the product to enable you to get leverage and to reach. That's what rural New England communities need. They need leverage in the market and they need reach.

It's very complicated, but Maine is in a very interesting position to have a very aggressive and positive posture in the East Coast fishing industry – in a quiet way that could be very beneficial to Maine and the United States fishing industry.

Comment. Stasuikiewicz: One of the problems I see when you're building a pier is trying to make it all things to all people. If you don't have some sort of system where you commit yourself to a group of people, or one company, for at least a portion of it, you won't be able to have icing facilities on there, you won't be able to have fueling facilities. Unless there's some sort of long-term lease that dock is going to be there for pleasure craft, but nobody is going to put any money into it. If you have a large pier you have to have these facilities and the power (electricity) going out there and some protection so a person can work out there (the wind might be blowing 40 knots), and that means you have to make a commitment for at least part of the pier to someone that's going to be willing to put that money up-front. On our operation, the replacement value is about $1.5 million just for the ice facilities. We just put in diesel tanks to hold 30,000 gallons. (Because we're near the water, we had to encase the thing in concrete; that cost us $117,000.) And we wouldn't go out and do that if we didn't have a long-term lease.

Comment. Charles: Again, it's that delicate balance between the public concern for a facility and that of private enterprise, which in many cases can run these things better than any public entity.

Q. Who has the police power on the pier in Portsmouth, and how does that person relate to the harbor master in the harbor of Portsmouth?
A. Marconi: It just so happens that I run the pier and I'm also the harbor master. My full-time salary is from the Department of Resources, and my part-time job as harbor master is in the New Hampshire Port Authority. Anything that happens on the pier is controlled strictly by Department personnel and chain of command: the Chief of the Bureau of Marine Services, then the pier manager, then my staff. There are rules and regulations that are set down by the Department. As with all rules and regulations, there is a certain amount left to the discretion of the personnel. We haven't had any major problems as yet. We're at an advantage because I'm there every day. Any problems as far as safety of vessels in the harbor, I'm right there.

Q. Charles: Do they get you out at night, too?
A. Marconi: Yes.

Q. In terms of day-to-day operation with vessels coming from outside Portsmouth, say, southern Maine and New Hampshire outside the Portsmouth area, what kind of authority do you have, or what kind of rules are set up insofar as accommodating their unloading and their servicing?
A. Marconi: The way the pier is set up, it's become a regional thing. We're taking fish from Ogunquit, York Harbor, Kittery, Kittery Point, Portsmouth, Rye harbor, and Hampton harbor — even a couple of boats from Newburyport — so we're taking in quite a large area. The permanent berthing at the pier is on a New Hampshire resident, Portsmouth harbor, preference. This pier was built primarily with New Hampshire money. It was put in Portsmouth because of the needs of the Portsmouth fishermen. But we have three unloading winches there (they're heavy-duty, one-ton winches so they can handle a lot), and those three loading docks are left open at all times. So if a guy comes in and wants to unload, he can pull right in and unload. We have a user's permit which allows a boat from wherever, whoever he is, to come in and use our facilities, our loading and unloading equipment, and do a little work on his boat if he has to. And that has worked out extremely well. It's set up on a daily to annual rate: $10 per day to a maximum of $100.

Q. How close to capacity is the fish pier? Has there been any competition with recreational boaters? Have you turned any people away?
A. Marconi: The fish pier was set up by legislation. The statute was very specific that it's for commercial fishermen. We do bend the rules a little bit. If a boat wants to come in and step their mast, they call us a couple of days ahead of time to let the crane come down. But, in and out, that's it. The pier is at capacity. We have a waiting list. We're trying to make some plans on how we can expand it. We've only been operating eleven months. This thing has snowballed.

Q. I'm with the city of Rockland. For environmental reasons, there is concern about a solid-fill pier. I guess there's a preference for a pile-type pier. I was wondering whether the preference of the panelists would be for a solid or a pile-type pier? Would a solid type be stronger or require less maintenance?
A. Stasuikiewicz: At Point Judith, we tried to get land-fill with solid fill, but we ran into the problem that the state says you can't put it in because it will change the current and you'll have accumulation and you won't have any circulation in that area. In some cases we have creosote poles with oak fenders on the side, but when you get a 95-foot steel boat and it runs into that (they use them as brakes once in a while) it does cause a problem. They really don't last that long. I imagine a substitute for land-fill might be a spile made out of concrete. The others don't put up with the beating.

Q. The roads where I live are so narrow that I have trouble getting through town with a van. A pier is going to be put right into the center of town, which is very heavily populated. I'm wondering, how much noise is there going to be at night? How much extra traffic from these great big trucks? What's this going to do to our town, a beautiful little coastal town that relies on the tourist industry?
A. Marconi: When we were going through our legislative process, I heard that a thousand times, and every one was hollering about the trucks, the traffic. Where

the pier is situated in Portsmouth, it's right in the middle of the Strawberry Bank area, which is a historical development. And there's only one street to get out of our pier. We haven't had any trouble with our trucks and we haven't had any complaints about our trucks.

Q. How about the refrigeration units on the trucks themselves?
A. Marconi: Where the trucks are parked, it muffles the sound.

Comment. Ciomei: I've managed a co-op facility for fourteen years, five years of which we handled the fish. We had our neighbors down there take us to court. They had the deputy sheriff, they had the Attorney General. . .the smell, the odor, the refrigeration noise. All I can say is that Portsmouth has got much friendlier people!

Comment. Marconi: We go out of our way to keep the place spotless. And my crew jumps on me sometimes to get the hose out and hose it down and keep it clean. In the middle of the night if somebody is unloading a boat and gets a little loud, I'm going to hear it.

Comment. Charles: There's nothing like being in town and watching 40,000 pounds go out on a fish truck every night. That's a real good feeling. Nobody is going to lean on you then.

Comment. It's also nice to have your husbands or your sons over there on the pier making a living.

Comment. Charles: In Chatham on the Cape, the fish pier is located right next to the Chatham Bar Inn, an exclusive resort. . .and they get along just fine. The beginning of the dialogue is the fishermen, the pier operators,and the community appreciating [these issues]. Generally they can be worked out.

CONFERENCE SUMMARY

DOMINIE: The Coastal Program is not just a local program, it's composed of many things. The person who oversees our program is Esther Lacognata. She's the Coastal Program manager. She's the one who has been listening and observing. I'm wondering what her impressions of the conference are, what she's going to tell the Governor, what the state can do as a result of this. Let's hear what Esther has to say.

LACOGNATA: People have sat through an incredibly intense and informative conference. It's been really gratifying to hear what others have to say, to observe this exchange of ideas, to see you get involved in substantive issues. Even if you don't remember all the information, at least you know whom to contact. Lists of the attendees have been compiled so you'll be able to communicate with each other after the conference is over. Another thing that has been terrific about this conference is that it has demonstrated this balance that we're always talking about, which is the goal of the coastal program — this balance between development and conservation. They go hand-in-hand. You really can't have economic development unless you are managing and conserving the resource that you are trying to develop.

I want to pull out some of the common threads that I've observed through all these sessions. I want to outline a few things that I've heard that we have to do, and interject a few editorial remarks, which I suppose it is my privilege to make. I've tried to talk to some of the staff to make sure that I reflect some of their views.

One of the common themes here is the basic understanding of the use of the resources and the opportunities they provide — the natural resources, the historical resources managed for our betterment, that came out so well in the Newburyport session. We don't do as we did in the sixties — we don't go bulldozing the very values that require protection.

We need to recognize, and we are recognizing, that priority needs to be given to water-dependent uses. The land is scarce, the value is going up. The discussion of boat building identified the fact that that industry is being squeezed out by the high land values and competing, incompatible land uses. The South Portland presentation also made this clear. It is important to recognize the uses which depend on the water and to save that very precious land for those uses.

The partnership element came out in almost every panel. In order to make these things happen, there needs to be a partnership - cooperation among the private sector, the public sector, the local, state and federal governments, endowments, and funding sources. There are local organizations, volunteers efforts, and public involvement at all levels. I think the Coastal Program is an excellent example of bringing these elements together. Other examples of this were the Department of Marine Resources working with the Maine Development Foundation and fishermen's co-ops to make the most of our fishing industry. George Campbell from DOT mentioned that in order to make containerized ports happen, you need the commitment of the local government, but more important, the commitment of private enterprise to the shipping of their products out of Maine.

Another very strong element throughout this whole conference has been the need for local involvement. This is an element of the partnership. Without the involvement of local citizens, most of these things don't happen. You need to get your town organized first, find out what it is that you want to do, get your own data through volunteer effort before you hire a consultant or apply for federal funds. Vyto Andreliunas said it very strongly: you need to get your value systems together, because if they come from the outside, you resent it. This is a lesson that I think has been learned from the '60s and the urban renewal and the planning that was done with 701 money. These plans sit on the shelf. This business of local involvement, or citizen participation, is the key to the success of any of our efforts.

Partnership and local involvement come together as leverage for funds. You get volunteer effort, then you work with the state, your regional agencies, and the various agencies of the federal government. Another common term used here is "leverage" or "piggy-backing." There was some cooperation shown between neighboring communities; Bangor and Hampden provide an excellent example. Neighboring states. The last panel brought out Kittery and Portsmouth, Maine and New Hampshire, working together.

There were also common problems that came out. Sometimes these turn out to be opportunities. A common problem is competing uses for scarce coastal lands, the increasing cost of energy which, as Nate Bowditch pointed out, is an opportunity for creative alternative uses of energy. Transportation creates problems also related to the energy shortage, but it's a creative opportunity for using the sea as an alternative mode of transportation. Transportation is also a problem when it comes to having to provide parking and auxiliary services for all of these facilities we're thinking of.

Quality was another common thread throughout the meeting. In marketing the fish product, it's the quality that is really going to make the difference. Quality of product and the quality of the redevelopment effort, taking a look at and analyzing what exists in the communities – historical resources and natural resources. Obviously, quality is a subjective term, but it has to be considered.

The last common theme is hard to label, but it's the interrelationship, or the adding on, or spin-offs of everything that we do. When you're doing planning with the objective of enhancing economic opportunities, you're also enhancing recreational opportunities. Synergistic effect – working on one issue or project has a positive impact on another one; and together they have a much greater effect. I think this was illustrated in the Newburyport effort. Once something gets going, there's an atmosphere of confidence which builds and enhances the private interest and more and more can happen as a result of it. That also has its other side which has to do with putting your planning into some kind of community context, the negative situations that result when projects are undertaken without evaluating their effect on the whole. I hate to use the term "comprehensive planning" because that's another one that's lost its meaning, but nothing happens without an impact on something else in the community.

In the same vein, it is extremely important, before you go to a consultant, before you make commitments of these funds — for the community to not only gather information but to examine the impacts and alternatives as much as the available information permits. Environmental impact, after all, means what is the impact on the fishing industry, what is the impact on the wetlands, what is the impact on the historical and cultural resources of an area. Don't do that as an afterthought, because then you're viewed as an obstructionist by everyone committed to the project.

Develop a more uniform, equitable taxing system for boats. It's an issue that you don't jump into without examining. There will be opposition, but I think it's a good suggestion that we look into the options.

Looking into uniform harbor regulations — there, again, I'm not sure that everybody would be in favor.

Another role for the Coastal Program came out in the first panel: to make sure that the state agencies are all pulling in one direction. The Maine Development Foundation is also a quasi-state agency. Public lands, Department of Marine Resources, DOT, DEP should be careful not to trip over each other. I don't want to be defensive about it, but I think the Coastal Program is making the utmost effort to do that. I see a need for improvement. I think the dredging issue is a typical example of that. I understand one of the suggestions that came out of that workshop was that the State Planning Office and the Coastal Program attempt to come up with a unified policy and priority on dredging. That is quite an assignment, but it's one I think we should consider.

The local monitoring of harbor winds, the idea of using volunteers to measure the winds so basic data can be made available to harbors that need it — I like that idea, and I think a precedent for it has been set in lake monitoring.

This idea came from Ed Langlois. If you need funds for a project, obviously there are a lot of resource people to help you: the State Planning Office, the regional agencies, Eastern Maine Development District. If you contact us. . .we also now have the capability of contacting federal agencies. Dave Duncan is here from the federal office. The Office of Coastal Zone Management is making a great effort by helping us to get to know some of the bureaucrats at the federal level, so we can contact these people for you. The last thing that Ed Langlois mentioned is that you can also go to your legislature for funds. As the Coastal Program phases out, if the state is interested in economic development of our waterfronts, then maybe it's time for the legislature to devote some state taxes to some of these efforts — and not look to the federal government. After all, we complain about federal control. If we're going to have anything developed, then maybe we ought to have state funding for some of these projects.

Two additional comments. The Coastal Zone Management program is now being reauthorized in Congress. In fact, the House is going to be voting on it next week, and in a couple of months there will be a House-Senate conference. Two very important things are in the new proposed legislation for Coastal Zone Management. One, there will be national recognition of and a national policy for urban waterfront

rejuvenation. It's going to be declared a national policy to revive the waterfronts and to gain economic benefits from them. I think that's a significant recognition of what is already happening. There is a section of the Act which will enable funding for completion of some projects whose planning was implemented by coastal funds, supporting waterfront rejuvenation with funds from this Act where other funds aren't available. I think that it would be very helpful if you would write Congressman Emery (who has been very supportive and is on the Marine Oceanic Committee) and our senators. If they hear from people who are actually involved in some of these projects, I think it would make a big difference for the Act.

I hope you have all gained as much from this conference as I have; and, even though there is a lot of work ahead, I hope you will not be discouraged by the obstacles but will, instead, be encouraged and take advantage of what you have learned here.

Thank you all for coming and for your patient attention.

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